

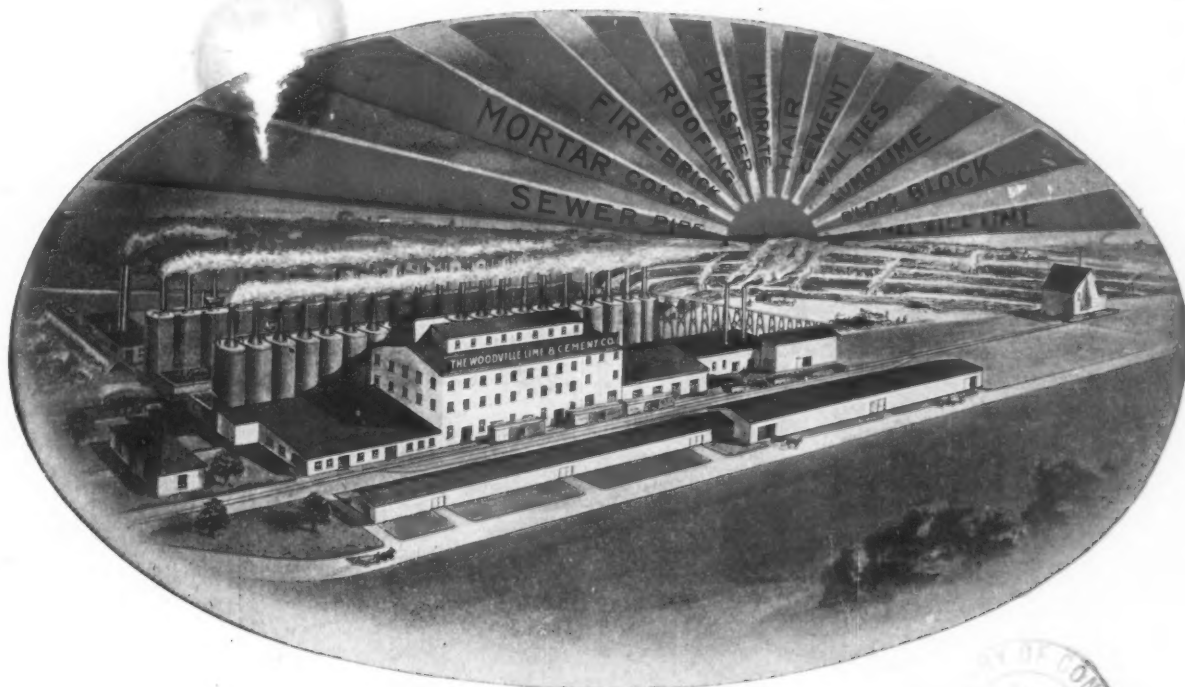
Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XV.

CHICAGO, ILL., NOVEMBER 7, 1914.

Number 1.



624
765
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"THE BEST UNDER THE SUN"

MANUFACTURERS OF

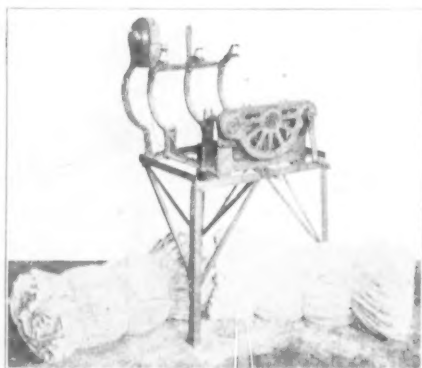
White Enamel Finish Hydrated Lime
White Lily Finish Hydrated Lime
Polar Bear "Alca" Stucco
Enamel "Alca" Plaster
Lump Lime

WHOLESALE OF

Hard Wall Plaster
Keene's Cement
Mortar Colors
Sewer Pipe
Roofings

The Woodville Lime & Cement Company

1341-50 Nicholas Bldg., Toledo, Ohio



Bag Bundler

IT COUNTS 'EM AND
BUNDLES 'EM

Saves Time
Eliminates Errors

A few of our many customers say:

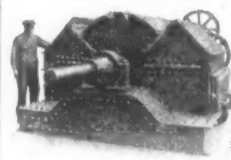
"It does the work of three men."
"Will shortly order three more."
"Would not take three times what we paid for it."
"It is a wonderful money saver."

Write for prices

**The Faerberhill
Manufacturing Co.**

1392 East 40th St., CLEVELAND, O.

Agents wanted in every city. A side line for machinery and builders supply salesman.



"PENNSYLVANIA"

Hammer Crushers For Crushing and Pulverizing Lime, Limestone, Gypsum, Marl, Shale, Etc.

Main Frame of Steel, "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running

No other hammer Crusher has such a big Safety Factor

Pennsylvania Crusher Co.

New York

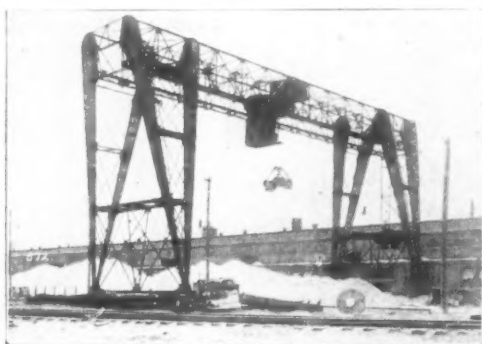
PHILADELPHIA

Pittsburgh

DEXTER

Portland Cement
THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia



Special Sand Handling Gantry Crane built for the Edward Ford Plate Glass Company, Toledo.

SOLVING THE PROBLEM

of how to handle your raw materials in the quickest, cheapest and best manner is easily accomplished if you

"McMYLER INTERSTATE WAY"

Our engineers are ready to co-operate with you and show you how. It is a real service in which they take great pride, and it is yours for the asking.

The McMyler Interstate Company Dept. P-2 Cleveland, Ohio

Products—Locomotive Cranes—All type of Buckets for every purpose—Elevating and Conveying Machinery, etc.

New York

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THE WHITACRE FIREPROOFING CO.

Manufacturers and Erectors of

Hollow Tile Fireproofing

The Largest Independent Manufacturers of Hollow Tile Fireproofing in the United States.

All our Ohio Product is Manufactured from Pure Ohio Fire Clay.

All Size Partitions, Jumbo and Hollow Brick.

Our heavy Dove Tail Hollow Blocks are designed especially for fireproof residences with stucco finish. They are suitable for any part of the building and are adapted to the various architectural designs.

**Without Our Estimate You Have
No Competition**

General Office: Waynesburg, Ohio

Chicago Office: Sales Department, 538 So. Dearborn St., Chicago, Ill.
Factories: Waynesburg, Ohio; Malvern, Ohio; Chicago Heights, Ill.

Wheeling Wall Plaster Co.

WHEELING, W. VA.



The Building Material
Supply House of the
Ohio Valley

**CAR LOADS AND LOCAL SHIP-
MENTS AT WHOLESALE PRICES**

Try Our Service

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

Are You Keeping Abreast of Cement Progress?

What you knew a year ago may be "ancient history" by now, so rapid is the progress in cement products, machinery, reinforcing, aggregates and appliances for cement construction. The one sure way to keep posted on improvements in concrete equipment and methods of construction is to visit the annual Mecca of the cement industry—the Eighth Chicago Cement Show at the Coliseum, February 10-17, 1915. Contractors, engineers,



architects, builders, and dealers in building materials will come here from all over the country to study and compare concrete equipment and concrete methods. The suggestions you will gain for the improvement of your business—the stimulus you will derive from "comparing notes" with your co-workers in the building field—will amply reward the time occupied by the trip. Make your arrangements for it now.

Under Management of

Cement Products Exhibition Co.
208 South La Salle Street, Chicago

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

GK2804-94

S.M. 11/2/17

For the biggest kind of building work, or the smallest

Marquette Portland Cement

has proved itself sound, reliable and 100% efficient—over and over again. A dealer who carries Marquette is going to build up the right kind of a trade. He will like to do business with us; we believe that the Science of business is the Science of Service.

The green guarantee tag on every bag of Marquette Portland Cement means we have made it better than government specifications; as much better as possible.

Look for the Green Tag.

Marquette Cement Mfg. Co.
1335 Marquette Building
Chicago

NORTH-WESTERN PORTLAND CEMENT



The Reliable Portland Cement

A Portland Cement for the
NORTHWEST

North-Western States Portland
Cement Co.
MASON CITY, IOWA

Best Bros. Keene's Cement

*The Plaster That Stands
Hard Knocks*



The permanent plaster for interior walls.

May be rettempered as often as necessary.

Makes a perfect bond on concrete, brick, tile or lath.



**The Best Bros.
Keene's Cement Co.**

Established 1889
Dept. A, Medicine Lodge, Kansas
NEW YORK CHICAGO



It is a fact that the contractors who are using the most "CHICAGO AA" Portland Cement, are the ones who have been using "CHICAGO AA" longest.



Dealers Everywhere—

YOU SHOULD HANDLE Monarch Brand Hydrated Lime

Because it's the only perfect Hydrated Lime and you can get increased business by recommending it. It's uniform. It's fine. It won't "blister" or cause "chip cracks" and "crazing."

You get the benefits of Monarch advertising service. You get the business that others are getting now.

Don't neglect this chance to increase your lime sales.

Ask us how we can help you sell Monarch Hydrated Lime. Write us that you want to be a "Monarch" man.

National Lime & Stone Co.
CAREY, OHIO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

PETER MARTIN Pres. & Gen. Mgr

JULIUS M. MARTIN, Asst. Gen. Mgr.

Capital \$1,500,000**THE OHIO AND WESTERN LIME CO.**

Manufacturers and Wholesale Dealers in

Ground Lime, Lump Lime, Fertilizer, Rock Wall Finish, Hydrated Lime, Cement, Plaster, Hair, Etc.**CAPACITY 8000 BARRELS PER DAY**

We have large stone crushers at various places. We make a Magnesia and high Carbonate of Lime. All of these limes are the very best on the market.

THE LARGEST IN THE WORLD

WORKS AT Huntington, Ind.; Fostoria, O.; Gibsonburg, O.; Sugar Ridge, O.; Tiffin, O.; Genoa, O.; Limestone, O.; Lime City, O.; Portage, O.; Marion, O.; Bedford, Ind.

OFFICES AT

Huntington, Ind.

Marion, Ohio.

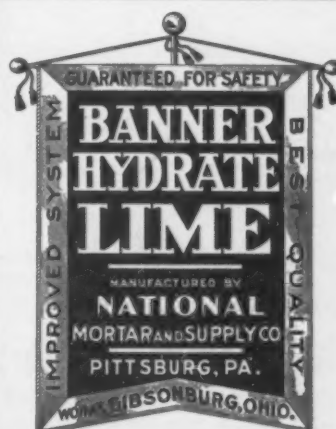
BANNER HYDRATE LIME**IS STILL IN LINE****NOT YET CENSURED BY
THE WAR LORDS OF TRADE**

—FOR INFORMATION WRITE—

NATIONAL MORTAR AND SUPPLY CO.

A. H. LAUMAN, President

PITTSBURGH, PA.



**Beautiful Houses from Illinois to
Massachusetts are Roofed
with Reynolds Flexible
Asphalt Shingles**

A multitude of pretentious residences in a score of states are giving ample proof of the long-lasting surface of Reynolds Flexible Asphalt Shingles.

Every type of modern home can be protected and beautified, at lower cost, with these time-

tried, weather-tested shingles. They withstand the ravages of driving rain, pelting hail, hottest sun and heaviest snow without warping, cracking, splitting, curling or blowing off. Sparks cannot set them on fire. Long Exposure cannot dull their rich color. Adaptable to every style of pitched roof, and make possible unusual architectural effects, such as roll edges, thatch effects and rounded corners.

Reynolds Asphalt Shingles

**Guaranteed for 10 years—will wear many years longer—
Write for liberal agency proposition.**

Rough-surfaced weather defiers made of crushed slate or granite securely embedded in pure Asphalt. Natural colors of garnet, red or gray-green which never fade and never need painting. We are the original makers of flexible asphalt slate shingles and tested them for ten years before putting them on the market. They are uniform in size—8 ins. by 12½ ins.—and are laid 4 ins. to the weather. Easily and quickly laid.

Let us send you a booklet showing photographs of modern houses roofed with Reynolds Asphalt Shingles. Write for a copy TODAY.

H. M. REYNOLDS ASPHALT SHINGLE CO.
Original Manufacturer Grand Rapids, Mich.
Established 1868 Members of National Builders' Supply Association

**It May Pay You
To Purchase.....**

**Sewer Pipe
Flue Lining
Wall Coping**

and other Clay Products

FROM

The Thompson-Armstrong Co.

Provident Bank Bldg., Cincinnati, O.

**PLASTER**
**WOOD FIBER
PLASTER**

Fireproof Partition Blocks

Sackett Plaster Board

Steel Studding

Known as Brands of Quality

WHITE US

PLYMOUTH GYPSUM CO.
FORT DODGE, IOWA

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

AMERICAN CEMENT PLASTER COMPANY

General Offices: Lawrence, Kansas.

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Branch Offices: Columbus, Ohio. Ft. Dodge, Iowa.

MANUFACTURERS OF

**Wall Plaster, Wood Fiber Plaster
Molding and Dental Plaster
Finish Plaster
Wall Board and
Gypsum Partition Tile**

AGENTS FOR BEST BROS. KEENE'S CEMENT



United States Custom House and Postoffice, Omaha, Neb
KALLOLITE PLASTER USED

Kallolite Cement Plaster

Was used on the Omaha Post
Office, as well as many other

**Government and Public
Buildings.**

Kallolite Cement Plaster is manufactured from the Purest Gypsum Rock
found in the United States as shown by last Government Report.

CARDIFF GYPSUM PLASTER CO.

✉ Write for literature.

FT. DODGE, IOWA

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BRICK ROADS

ALTON BRICK COMPANY

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ALTON, ILLINOIS

Makers of High Quality Brick for
ROADWAYS AND PERMANENT BUILDINGS
 REPPRESSED AND DUNN WIRE CUT-LUG BLOCK.

"WORK SCENES"

a new publication illustrating the fundamental steps of
 brick pavement construction, may be had for the asking.

**NATIONAL PAVING BRICK
MANUFACTURERS ASSN.**

|| WILL P. BLAIR, Secretary CLEVELAND, OHIO

F. LAWSON MOORES, President

W. W. CONEY, Sec'y & Treas

Factory:

ZANESVILLE, OHIO**THE HARRIS BRICK COMPANY**

Manufacturers of
VITRIFIED SHALE BRICK, HARRIS PAVERS

Office: St. Paul Building
CINCINNATI

THE METROPOLITAN PAVING BRICK COMPANY

Manufacturers of "BEST PAVING BLOCK MADE"
CANTON - - - - - OHIO

**THE THORNTON FIRE BRICK CO.**

Use "Grafton" Shale or Fire Clay Block
 for Permanent Pavements

**CLARKSBURG,
 W. VA.**

ROBERT W. HUNT

INO J. CONE

JAS. C. HALLSTED

D. W. McNAUGHER

ROBERT W. HUNT & CO. ENGINEERS

BUREAU OF

INSPECTION TESTS AND CONSULTATION CEMENT & STRUCTURAL STEEL

INSPECTION OF ALL CONTRACTORS' EQUIPMENT NEW OR 2nd HAND—INSPECTION OF ALL MATERIALS OF CONSTRUCTION

Tests of Paving Brick, Steel & Iron—Chemical Laboratories

ESTABLISHED OFFICES IN

CHICAGO

MONTREAL

NEW YORK

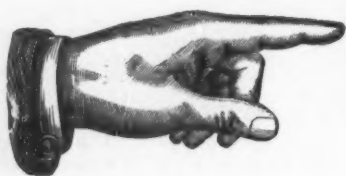
PITTSBURGH
VANCOUVERLONDON
TORONTOSEATTLE
ST. LOUIS

MEXICO CITY

SAN FRANCISCO

Do You Read the Classified Advertisements?
THE BOURSE—The Market Place of the Industry.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



Do You Handle Backup and Partition Tile?

Our "Minerva" Backup and Partition Tile are made from high-grade "Ohio" Fire-clay and we have a nice stock on hand from which we can make prompt shipments.

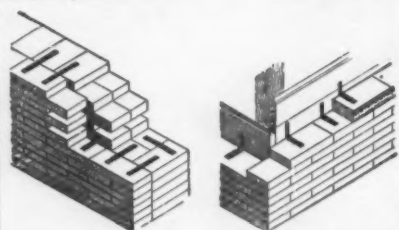
Those who have used our Minerva Tile are our references.

You ought to get our prices.

The Metropolitan Paving Brick Co.
Canton, Ohio



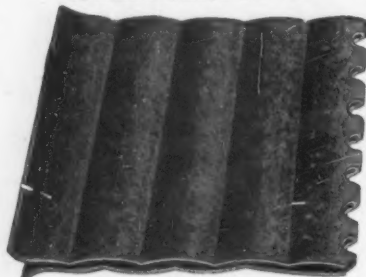
Whalebone Wall Tie



Tie for Solid Wall

Tie for Veneered Wall

2½ inches long x 2½ inches wide



Nailing Plug

When a Wall Tie is a Wall Tie it is the Whalebone

Made in any length from five inches to fifteen inches.

Standard size for Solid or Veneer walls 7 inches by 7/8 inches, weighing 50 pounds to the M. Packed 1000 to the box.

Price on Standard size, based on 21 gauge material, \$2.50 Pittsburgh per M, subject to dealer's discount according to quantity of order. Shipments made same day order is received. Special propositions in open territories.

Can quote on lighter or heavier material if desired, as we can supply the Whalebone in boxes weighing from 35 pounds to the M to 85 pounds to the M, according to thickness of material.

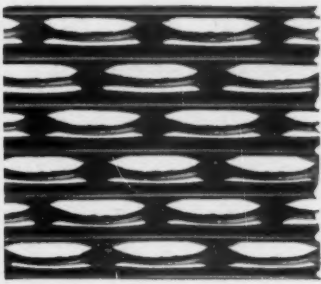
Allegheny Steel Band Co.

Bell Phone: 718 Cedar

North Side, Pittsburgh, Pa.

Tell 'em you saw it in **ROCK PRODUCTS AND BUILDING MATERIALS**

A METAL LATH GIVING DOUBLE THE WEIGHT OF RE-ENFORCEMENT AND INVARIABLY SHOWING THE CONTRACTOR A LOWER COST OF FINISHED SURFACE IS THE ONE BEST BET IN THE METAL LATH LINE



"BOSTWICK TRUSS-LOOP" IS THE LATH

WEIGHS 5 to 8 lbs. per sq. yd.—BEARS ITS OWN WEIGHT
Bostwick service gives the dealer co-operation
that reduces his selling expense, increases profits.

ARE YOU NEXT?

THE BOSTWICK STEEL LATH CO. NILES, OHIO



BRICK—The Old Way of Handling Them is a Nuisance

In tossing brick out of a car many are broken. A wheelbarrow doesn't carry enough bricks to warrant the time it takes to load, wheel it out and dump it.



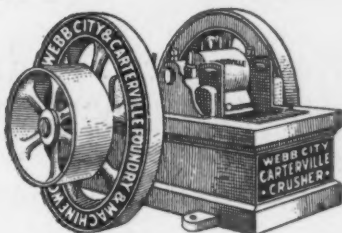
Use a CLEVELAND BRICK CLAMP *It is the Newest and Quickest Way*

Furthermore, in unloading brick it actually saves ONE-THIRD of the time over the old methods. This clamp is adjustable and will carry from FOUR to TWELVE bricks. There's no fuss or bother. Simply place the clamp down on the bricks and lift the handle.

The price? It is so inexpensive ANYONE can afford it. Just send your name on a postal and we'll send a neat catalog and price list.

THE P. D. CRANE COMPANY, 10201 Harvard Avenue, Cleveland, Ohio

Quarry



Problems

ARE SOLVED BY A CRUSHER THAT IS PROTECTED IN ALL ITS WEARING PARTS

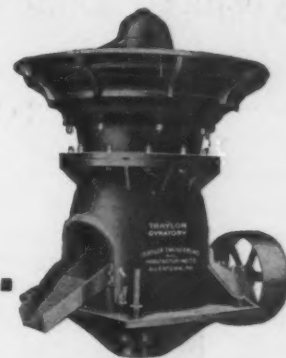
The bed of the Blake Type Crusher is protected by false removable wear-plates on either side of the jaw-bumper, held in place by bolts through the bed, which not only protects the bed, but insures a firm seat for the side plates. To overcome the fact that the bed becomes worn immediately behind the sideplates, and sand and other gritty substances work in between the sideplate and the bed, we have inserted a false plate between the sideplate and the bed, held securely in place by bolts through the bed. These false wear-plates are not employed in the construction of any make of crusher other than ours, being fully covered by our patents.

By the use of these false wear-plates we have a crusher that is absolutely protected, prolonging the life of the machine indefinitely.

**Webb City and Carterville Foundry
and Machine Works**

Main Office: - - WEBB CITY, MISSOURI

Traylor Improved Type GYRATORY CRUSHER



A Gyratory Crusher Equipped With Improve- ments Which it Will Pay You to Investigate.

A well proportioned shaft suspended at point of least motion.

A spider set clear of the concaves, allowing same to be removed and replaced without dismantling crusher in any way.

A positive lubricating system which insures a continual and ample lubrication so essential to the efficiency and value of the machine.

A DETAILED DESCRIPTION IN CATALOG G-2.

TRAYLOR ENGINEERING & MFG. CO.

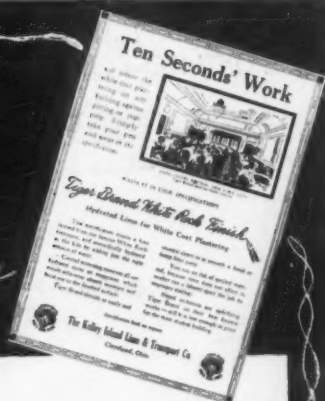
Main Office and Works, ALLENTOWN, PA.

N. Y. Office
24 CHURCH ST.

Western Office
SALT LAKE CITY

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

12,000
Architects
and Builders



The men who specify and buy material from you are reading every month about

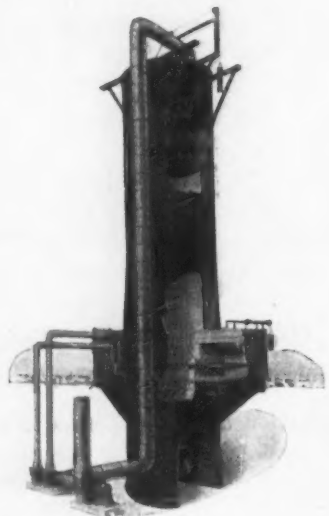


TIGER BRAND HYDRATED LIME

Keep Tiger Brand in stock and let these men know that you have it. We are spending money to send business your way. Don't overlook the chance.

The Kelley Island Lime & Transport Co.
CLEVELAND, OHIO

Doherty-Eldred Lime Kiln



The Improved Equipment Co.

COMBUSTION ENGINEERS

6 Wall St., New York City

Complete Coal Gas Plants
Complete Lime Burning Plants
Gas Producers

Lime Kilns
Special Industrial Furnaces
Refractory Materials



"Lehigh on the Job"

Twelve great mills—each strategically located on the main arteries of transportation—serve a nation with Lehigh Portland Cement in record-breaking time.

Our pride in our speedy delivery keeps pace with our pride in the quality of our product. Our "delivery pledge" is as sacred as our ideal to make the best cement.

We have scattered our mills from the Atlantic to the Pacific so that our deliveries everywhere might be unequalled in point of speed.

LEHIGH PORTLAND CEMENT

You are NEAR a Lehigh Mill. Your Supply will speed to you the shortest way in the shortest time. No time-killing, money-losing delays.

Today, one-tenth of all the cement used in this country is Lehigh. We offer that as indisputable proof of Lehigh quality.

DEALERS AND BUILDERS: Test our "QUICKEST DELIVERY POSSIBLE" service.

LEHIGH PORTLAND CEMENT CO.,

Main Office, Young Bldg., Allentown, Pa.

Western Office, Consumers Bldg., Chicago, Ill.

Pacific Office, Old National Bank Bldg., Spokane, Wash.

12 Mills—Annual Capacity Over 12,000,000 Barrels.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XV.

CHICAGO, NOVEMBER 7, 1914.

Number 1

PUBLISHED SEMI-MONTHLY.

DEVOTED TO

Quarry Products, Cement, Lime, Plaster, Sand and Gravel, Clay Products and Building Specialties—Fireproof Building and Road Construction.

THE FRANCIS PUBLISHING COMPANY.

EDGAR H. DEFEBAUGH, Prest.

Seventh Floor, Ellsworth Bldg., 537 So. Dearborn St., Chicago, Ill., U. S. A.
Telephone: Harrison 8086, 8087 and 8088.

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H. F. AKE, Secretary.
DRUSUS H. NICHOLS, Advertising Manager.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products and Building Materials his headquarters while in Chicago.

Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions.....\$1.00
In all other Countries in the Postal Union.....\$1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.
Advertising rates furnished on application.

Published on the 7th and 22nd of each month.
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Copyright, 1914, by E. H. Defebaugh.

The crushed rock quarry operators have had a reasonably busy season, although in some localities they could have pushed operations and moved heavier tonnages.

Plastered exteriors properly put on and properly proportioned with the right selection of materials make the most attractive finish that the industrial arts of the present day have to offer.

The Chicago Cement Show next February is going to demonstrate that the concrete industry of the country is somewhere near the livest of American industries—one that has not realized any obstacle as yet.

Cement products in the shape of building materials of various kinds, together with ornamental and decorative pieces and members of various kinds, are steadily winning their way and gaining an established foothold in the building trade upon the broad foundation of merit alone.

The reliable building contractor in the big cities especially is becoming more and more of a rare specimen. The cost of the average city job is probably enormously increased on account of the lack of anything like intelligent building organization. This is known to all of the big material men, but for years there has never been any concerted effort to improve matters by encouraging better contracting methods in any practical way.

The splendid fall weather has lengthened out the season by three or four weeks throughout all the Northern portions of the country, and the actual records of 1914 are going to show some very satisfactory figures in the building material line, in spite of the much-overestimated depressions so often enumerated during the season from time to time.

The foreign trade balance is in our favor in such a big measure and with the certainty of continuing for such a long period that there can be no longer any anxiety about heavy gold shipments, even in the most conservative banking circles. This is something to be thankful for and has always been considered as the harbinger of very prosperous times.

The list of newly elected public officials again portrays the need of the business brains of the country taking on the control of politics. Nearly all of the unsatisfactory features of modern business life are traceable to careless or criminal selections of public officials. The men chosen for unimportant local offices impart the color and flavor of civilization which breeds dissatisfaction and causes that state of political unrest which is indeed most deplorable.

The concrete silo has made good as a permanent farm improvement of great economic value. The cost of the modern types of reinforced block and monolithic silos is not so extensive as to be prohibitive any longer. They are worth the money invested and pay the farmer big dividends in result. The resistance to heat penetration of concrete for the protection of imbedded metal is a well-demonstrated value which has never been capitalized and applied as much as it might be.

Probably the most important thing that the coming road congress and road convention could accomplish for advancing the road movement would be to develop a complete, truthful, statement of the costs of the construction of all the various types of roads under all of the various essential conditions in which they have to be constructed. As soon as the public can be intelligently notified of the approximate cost of the kind of road needed for the degree of traffic that meets its particular requirements, the more easy it will be to bring road improvements up to the necessary financial support to secure the roads, no matter what that sum may be. We find that the people everywhere want roads and they want them fully up to the traffic requirements. How shall they know what their traffic requirements are, and how can they take measures to provide the funds in face of the wide variation of present estimate on the cost of road construction?

ACTUAL PROSPERITY IS WITH US NOW

From the standpoint of the visible supply of human necessities, the United States of America is today the most prosperous country in the world, in spite of the ghost-like whispers and long-eared chatter of uninformed alarmists. It is true that much the greater part of the Caucasian race residing in Europe is waging the most gigantic war that the world has ever known over their internal strifes and jealousies. On the battle fields and on the high seas they are industriously destroying with fire and sword just as much as possible of all the accumulated wealth of one another. By this route those contending nations are deliberately pauperizing themselves and making out of the richest nations in the past the poorest for the future. The millions that are squandered daily in the support and movement of armies, and the destruction of cities, villages and farms, not overlooking the sinking of merchant ships and incidentally the floating fighting machines, rolls up into an enormous aggregate which has to be subtracted from the total accumulated wealth of the nations participating in this war. They are consequently actually and physically impoverished by exactly the sum total cost of the war, because it will take hundreds of years of future human effort, intelligently directed, to accumulate a similar sum. With the enormous destruction of life, the future replacement of this destroyed wealth becomes a most difficult problem, in exactly the ratio of life-waste in the battles of the flower of young manhood, which those nations could have depended upon for the best achievements in the immediate future of recuperation.

Our Position as a Neutral Nation.

Knowledge is made up of comparisons, and science is the perfect application of standardized comparisons. Let us compare the waste, destruction and future human unavailability of the former rich countries of Europe with our own fortunate situation. None of our fields have been laid waste; none of our cities have been rifled, ravaged or razed; none of our merchant ships have been sunk, nor has the life of our young manhood been used for cannon food. All of the contestants ubiquitously recognize our position of neutrality and respect our present status as that of the most powerful non-combatant.

American Securities Are Stable Assets Abroad.

On the face of the returns, then, this nation, having suffered no losses, has become richer than it was before all of this foreign destruction started last July, by exactly the amount of the total war havoc in Europe. This increase in comparative wealth is a definite and unalterable asset, in spite of the approximate six billions of American securities held by European investors, and contrary to the statements of the biggest men of finance that there will be a selling stampede of American securities as soon as we offer the facilities for such a movement. It must be remembered that foreign investors have a very high opinion of American securities just now, because they pay substantial dividends and are outside of the zone of danger of annihilation of the properties represented by the investments, as well as future war taxation which their own investments will be subjected to as soon as the war is over. Without doubt a majority of the foreign investors will prefer to keep their holdings in American securities, which today are the best and safest that the money markets of the world can hope to find for many years to come. British, French, German and other European securities of every kind are tottering and cannot recover from the effects of this war, and only those are disturbed about this element of the world's finances who hope to buy high-grade American securities at very low war panic prices, provided they are able to achieve some semblance of a stampede amongst European sellers of American securities.

Much the greater part of European owners of American securities now hold them in much higher regard than they did at the time of purchase, for they will need the income acutely, and they regard our undisturbed values very highly. The total sum involved in this feature of American securities abroad could be digested in a single year like 1914 by the sheer increase of wealth coming out of our business activities; at least all that will be offered can be easily digested.

Ready Market for Wheat Exports.

Nineteen fourteen is not by any means a normal year. The enormous increase of our relative worth by comparison with depleted competitors is further augmented by wonderful crop results. Taking the statistics issued by the United States government's agricultural department, we find that the wheat crop of this country has made a new high record, amounting to about 900,000,000 bushels, affording a net surplus for exportation of fully 300,000,000 bushels, after subtracting all of our needs at home for food, for seeding and for the feed of domestic animals. This largest available supply for export in history comes to us in a year, when practically the whole wheat area of the world has suffered a shrinkage, many of the wheat-producing countries falling below average production. Great Britain and Australia alone report increases over the records of last year, while all of the other wheat-producing countries record a falling off of from 10 to 25 per cent, notably Russia's big drop from 962,000,000 in 1913 to 779,000,000 bushels this year, and the Dominion of Canada crop falling from 232,000,000 to 159,000,000 bushels. German and Austrian wheat reports are unavailable until the first of the year, but judging by the parallel of surrounding countries and from the fact that the war has not cut much of a figure with harvesting in either of these countries, a 10 or 15 per cent falling off may be reasonably expected. Thus nature has provided in the needs of other countries a ready market for every bushel of our export wheat.

Cotton Situation Is Secure.

In spite of the temporary troubles in the movement of cotton which has been largely augmented, magnified and advertised by the foolish campaign of several northern newspapers entitled "Buy a Bale of Cotton, and So Save the South," the worst is over in that direction and improvement is rapidly setting in as winter conditions advance. The cotton crop of British India will be smaller than it has been for a year or two, on account of a smaller acreage being planted, whilst our own bumper crop of about 15,500,000 bales will be required to clothe four-fifths of the population of the world within a year from the present date.

There is no substitute for cotton; each and every human individual is necessarily a cotton consumer, with very slight variation as to his choice in the matter. As the winter gets colder more comforts are required. Nothing else will serve the purpose that is within the reach of the consumer's purse. All of the indispensable clothing of each human individual is of cotton, and the increased number of pounds are employed as the weather gets colder, not from choice but from the pressure of the winter which none can escape. The fact that English, German and French cotton spinners have been out of the market, and because the workers are molding bullets and the operators are short of cash, does not mean that the dependent consumers of cotton will be able to dispense with a single stitch, but it does mean that many of those consumers who have in the past been rich enough to afford to buy woolen blankets will find equal satisfaction in cotton comforts at less cost. There are some who believe that had the new banking system gone into effect in July, according to program, there would

never have been any of the cotton troubles of the last few weeks, because with a new basis of credit available our spinners would have gotten busy at maximum capacity long before they did, and the resultant goods in the indispensables of hosiery, underwear and bleached and unbleached muslins would now be coming into the market and making a new item for our ever expanding export trade.

Export Trade Must Be Provided For.

The expansion of our export trade in the future in cotton commodities has got to be expected and provided for. There is no reason or excuse now for one available spindle to remain idle in the American mills, for the world's demand for cotton commodities is piling up like an avalanche, which cannot be taken care of by our greatest possible output in any appreciable degree. We learn from statistics that the great English mills cannot be operated full because of a lack of labor supply, the men having gone to the war as soldiers, and many of the skilled female operators as nurses.

Feed Crops Abundant.

The great feed crops of corn, oats and barley are in more than normal supply in every part of our country. Potatoes are abundant and of a very high quality. With such an increase of comparative wealth and with such a supply of all crops that furnish the necessities of life, one turns with satisfaction to other statistics to note the production of apples, grapes and other luxuries, only to find that in this year A. D. 1914 our country has been blessed with a greater profusion of the supplies and luxuries than there ever was reported in any past year.

Of what does prosperity consist if it will not analyze into "plenty to eat, plenty to wear, plenty to drink, and something to spare," and such is the condition right now, with plenty of work besides to be done to keep every possible worker busy and happy; with plenty of shelter, fuel and food; with every man in the whole business organization of the country, ready, able and willing to serve each in his particular capacity to the needs of all.

Our export trade, great as it is, is a mere bagatelle to this wonderful domestic market of ours, which consumes more of the best grades of our abundant supplies than all the other markets of the world combined; and for this we do not need foreign trade balances of gold deposited here, there or anywhere, but the homely credit of the busy man who wills and dares to achieve things, and who wants the comforts of life in big measure for his efforts.

U. S. World's Most Prosperous Nation.

Upon such a basis and from such a standpoint of observation this United States of America is the world's most prosperous nation, destined to hold such a period of prosperity as has never been experienced in the past for at least a decade without the possibility of a competitor diminishing its most wonderful progress, and that condition is in effect at the present moment and its realization is growing every day.

The great staples of Portland cement, hydrated lime, and prepared plasters will accumulate great export additions to their domestic business along with the readjustment of commercial balances of trade, after the European war clouds have blown away.

The entrance of the turbaned Turks into the arena of war opens up wider possibilities for the spread of the disease. It may involve all Asia if the attitude of the strife concentrates around the Moslem tenets of belief. The strategic position of the Bosphorus and the Suez canal, which is the connecting link between British home influences and the Empire of India is unquestionably at the mercy of the Turks if the Moslem spirit is once aroused. History has not yet recorded many entries on the credit side of Moslem mercy.

WITH YOU and ME

T. H. Arnold, former cement plant engineer for Sellers & Co., has assumed charge of the plant of the Coosa Portland Cement Co., Ragland, Ala., as general manager. Mr. Arnold took up his position October 1.

P. D. Van Vliet, of the promotion department of the Universal Portland Cement Co., was threatened with appendicitis at the Milwaukee Road Congress, but was well enough to proceed to Atlanta, after a few days at home recuperating.

John R. Walsh, Toronto, Ontario, who has been secretary-treasurer of the Canadian Clay Products Association for a number of years, has resigned and will take up his residence in California. Gordon Keith, secretary of the Canadian Clay-Worker, has been appointed by the executive committee to take up Mr. Walsh's work.

H. H. Frazer, sales manager for the R. B. Tyler Co., Louisville, Ky., who was recently taken ill of typhoid fever, is improving and will probably be back on the job in about two weeks. R. B. Tyler, president, reports business slightly quiet just now in the brick line, except for delivering, which is very heavy just now. These orders were largely taken during August and September.

F. W. Connell, secretary of the Indiana Crushed Stone Association, has just returned to Indianapolis headquarters from a week's trip in Southern Indiana, having talked in different counties on the merits of water-bound macadam roadways. Mr. Connell stated that it was very gratifying to know the amount of interest that was taken by public officials and taxpayers in the good roads question. Vanderburg county is in the lead of the southern counties in the number of miles of improved roads, and at the present time is just completing a 15-mile stretch of water-bound macadam.

M. B. Trezevant, general manager of the New Orleans Association of Commerce, advises Secretary R. L. McChesney, of the Contractors' and Dealers' Exchange, of that city, that the following candidates from the exchange are appointed to attend the National Trade Conference of the Mississippi Valley and Central West in Memphis, Tenn., on Nov. 19 and 20: W. W. Carre Co., Ltd.; Natalbany Lumber Co.; C. T. Patterson Co.; Salmen Brick & Lumber Co.; Stauffer-Eshleman & Co., Ltd.; G. H. A. Thomas Co.; Woodward-Wight & Co., Ltd.; Great Southern Lumber Co.; Poitevent & Favre Lumber Co., and the Lyon Cypress Co.

Directors of the Dixie Portland Cement Co., Chattanooga, Tenn., have accepted the resignation of George E. Nicholson, of Kansas City, as president, and elected Richard Hardy as his successor. Mr. Nicholson's resignation was accompanied by explanation that pressing business matters in the West made it impossible for him to serve the Dixie company longer. Mr. Hardy, as vice-president and secretary, had already been practically head of the company for three years. Following Mr. Hardy's election, T. R. Preston was elected vice-president, and George Killian, formerly assistant secretary, was made secretary.

W. W. Cooney, F. H. Kinney, of Cincinnati, and A. E. Bradshaw, of Indianapolis and Louisville, were Chicago visitors during the past week. They talked over association matters with President Cormack, of the National Builders' Supply Association, and discussed business. Mr. Cooney recently had his handsome residence in a Cincinnati suburb destroyed by fire, and he promises to build the next one so that it can't burn, because he finds this fire business unpleasant and expensive as well.

J. H. Allen, of the Nebraska Material Co., Lincoln, Neb., was a Chicago visitor during last week. He reports business to be very satisfactory out in his section, as every line which they represent shows an increase over last year's record. In his opinion all of the dealers of the plains have had the same kind of satisfactory business this year, because the farmers have all had big crops and good prices for wheat and corn.

Richard L. Humphrey, of Philadelphia, celebrated cement expert, was a recent Chicago visitor; in fact, he has made a little tour amongst the Western cement mills and has found the conditions of the cement trade very satisfactorily reported for the whole active season of 1914. Mr. Humphrey has been identified with the Portland cement industry since its inception in America and has had extremely wide observations of all of the European mills. He considers that the war conditions in Europe, involving as they do the principal cement countries of Germany, France and England, will mean eventually the opening up of very extended export markets for American manufacturers which can be maintained permanently after the readjustment of foreign commerce at the close of the war excitement. In referring to the work of the American Concrete Institute, of which he is the founder and has always been the leading spirit, Mr. Humphrey remarked that its growth and influence has developed quite as rapidly as is reasonable to suppose in the progress of such a conservative party. In fact, the membership is steadily growing, and when the standards of the institute, through a still greater increase in the membership, shall become the universal practice of concrete engineering throughout the length and breadth of the country, it will achieve greater results for the cement industry, the building fraternity and the public at large than any other technical society.

C. W. Boynton, for many years the head of the inspection department of the Universal Portland Cement Co., at Chicago, has been actively interested for several months in organizing a company for the development of a very important magnesite deposit in California. He is in Frisco at the present time, and there is every good business reason why such a concern operating upon a large scale should prove eminently successful. The only other commercially important deposit of pure magnesian carbonate is located in Austria and has been extensively operated by German and American capitalists, who have supplied the world's demands for this material for a number of years. With the closing of Austria's port of Thiest on account of the war, practically no shipments of raw magnesite or the calcined product have been shipped since July. The California deposit in which Mr. Boynton and his associates are interested is only about 150 miles from San Francisco and is a much more abundant supply than that in the Austrian Alps. Magnesite is extensively used in the production of the very highest grade of refractories, and the elusive values of Sorel cement offers a field for exploitation which may bring wonderful returns. For the reason that nature has made such a restriction of competition magnesite developments at this are quite attractive. Mr. Boynton is fully capable with all the technical and mechanical knowledge needed to make the most successful magnesite proposition, and with our best wishes we predict eventual big success for these magnesite properties under his guidance.

Scheduled Meetings and Shows.

Nov. 9-14.—American Highway Association. Fourth American Road Congress, Atlanta, Ga.

Nov. 17.—Mar-Del-Col Building Material Dealers' Association meeting at Emerson Hotel, Baltimore.

Nov. 18-20.—Washington State Good Roads Association, Spokane, Wash.

Dec. 8-10.—The Face Brick Dealers' Association of America. Annual meeting, French Lick Springs Hotel, French Lick, Ind.

Dec. 8-10.—The American Face Brick Association. Annual meeting, French Lick Springs Hotel, French Lick, Ind.

Dec. 14-17.—American Road Builders' Association. Annual convention, Chicago.

Jan. 13-15, 1915.—Nebraska Retail Lumber Dealers' (Lumber and Building Material Dealers) Annual Convention, Rowe Hotel, Omaha, Neb.

Jan. 26, 27, 1915.—Retail Lumber Dealers' Association of Indiana, Indianapolis, Ind.

Feb. 8, 9, 1915.—National Builders' Supply Association. Annual convention, Hotel Sherman, Chicago.

Feb. 10-12, 1915.—Illinois Lumber and Builders' Supply Dealers' Association. Annual convention, Hotel Sherman, Chicago.

Feb. 10-17, 1915.—Eight Annual Chicago Cement Show. Coliseum, Chicago.

Feb. 16-18, 1915.—Wisconsin Retail Lumber Dealers' Association. Annual convention, Hotel Pfister, Milwaukee, Wis.

George S. Bartlett, of the Edison Portland Cement Co., now located in New York, was the principal speaker at the smoker of the Northwestern Road Congress at Milwaukee last week. He had accumulated a brand new line of war stories and other highly classic literature, which helped everyone present to enjoy the occasion.

C. B. Ver Nooy, vice-president and treasurer of the Illinois Brick Co., with offices in Chicago, has retired from active business life. Mr. Ver Nooy began his career in the brick making field in Chicago with the Purington-Kimball Brick Co. in 1885. That concern with 35 others was merged into one company in 1900, forming the present Illinois Brick Co. Mr. Ver Nooy will leave Chicago, going to Ocean Springs, Miss., where he will make his future home.

Highway Enthusiasts Meet at Milwaukee

Engineers, Commissioners and Laymen Assemble in Cream City and Organize Northwestern Road Congress—G. W. Cooley Elected President.

The beginning of a concentrated effort towards a comprehensive system of planning and direction of the movement for permanent highways in the states of Michigan, Wisconsin, Iowa, Illinois, North and South Dakota was accomplished during the four days of Oct. 28 to 31, when the first annual meeting of the Northwestern Road Congress was held at Milwaukee, Wis.

In addition to the congress, an exhibition of road-making machinery and materials was held. The exhibits were placed in the main room and the various sessions of the road congress were held in Juneau hall of the Milwaukee auditorium.

The congress and exposition was the means of drawing to Milwaukee about 1,000 highway commissioners and engineers, road machinery and material manufacturers and dealers. They were welcomed to the "Cream City" by Acting Mayor Cornelius Corcoran and John H. Hazelwood, chairman of the Wisconsin Highway Commission, who represented Governor McGovern.

Object of the Road Congress.

The aim of the congress was explained in the opening remarks of President T. R. Agg, professor of highway engineering at Ames, Ia., when, in speaking of "the purpose of the Northwestern Road Congress," he said: "We are from a group of states whose problems are enough alike to give us a common ground for discussion. It is our desire to reach such conclusions in regard to the basic principles and good practice as will enable us to advocate wise and constructive legislation, practical and efficient methods of administration, durable types of roads and efficient methods of construction and maintenance."

State highway engineers of the various commonwealths represented in the congress followed Mr. Agg by giving reviews of the highway problems in their respective states. Speaking for Illinois, T. C. McArdle said: "Illinois has decided on two types of roads, and this after much thought and investigation. We are in favor of highways of either brick or concrete. We aim to get a dollar's worth of use from a dollar's expenditure."

"Our trouble lies in securing competent superintendents," said George W. Cooley, of Minnesota. "They are not available. I believe that substantial construction and travel laws should be passed so as to reduce to a minimum all maintenance expense."

"We have in Minnesota 8,000 miles of good roads. We find that there is an average of three culverts per mile and one bridge every 10 miles. Last year we built 65 concrete bridges."

T. H. McDonald of Iowa stated that road laws have become matters of local importance and that the lack of co-operation between the different bodies in the state is rapidly disappearing. "There is an absolute necessity for co-operation between township and county and between county and state road officials if we are to get value received for the money expended," said Mr. McDonald.

Other engineers who spoke were A. R. Hirst of Wisconsin and Frank P. Rogers of Michigan.

During the first session of the congress, a constitution and set of by-laws were adopted and the Northwestern Road Congress formally organized.

Smoker Brings Attendance Together.

The committee in charge of arrangements, working in conjunction with the Citizen's Business League of Milwaukee, saw that the visiting delegates were well entertained the first evening of the four days' session. A smoker was held at the Auditorium for the particular purpose of giving the attendants a better opportunity to get ac-

quainted with each other. Informal talks were made by a number of the more prominent visitors. The other evenings of the congress were spent in visiting the various club rooms and places of amusement in Milwaukee.

Second Day's Session.

The second day's session was called to order at nine o'clock and was given over to the discussion of "Highway Administration." John Hazelwood presided at this meeting.

The afternoon's session was presided over by Wm. E. McCarty, chairman of the Milwaukee County Board of Supervisors, and consisted of papers and discussions on "Highway Legislation."

The subjects of these papers were mentioned in the Oct. 22 issue of ROCK PRODUCTS AND BUILDING MATERIALS.

Promptly at nine o'clock Friday morning dele-



GEORGE W. COOLEY, PRESIDENT, NORTHWESTERN ROAD CONGRESS.

gates to the congress met at the Auditorium and left in automobiles furnished by the Milwaukee Auto Club for a tour of inspection of the street and road improvements of the city of Milwaukee and Milwaukee county. The entire trip outlined took in about 100 miles of roadways and ample opportunity was given for comparison of the use of the various materials, as the machines were taken over brick, concrete, asphalt, macadam, gravel and earth roads. Milwaukee county is noted for the large number of recently constructed concrete roads and these were the center of attraction on this trip. Each of the visitors received a map of the county, together with a schedule of the roads traveled over, so that he could at all times know just what road he was on, the nature of the road and, if of concrete, the year in which it was constructed.

Characteristics of Types of Roads.

Friday afternoon's session was one of the most interesting of the entire congress. The characteristics of the various types of roads were discussed by men who had had considerable experience in constructing roadways.

J. M. McCleary, road engineer of Cuyahoga county, Ohio, opened the session by reading a paper on "Brick Roads and Pavements." Some of his remarks were:

"The question of road building has been uppermost in the minds of the American people for several years. It has been discussed from every viewpoint by the public and the press, until people in the remotest sections are familiar with the possibilities of improved roads.

"With regard to cost for the more traveled roads, Frank R. Lander, the dean of road builders in Ohio, says, 'cheap first cost in road building means nothing more than one of two things, ultimate high cost or complete loss.' Cheapness most often stands for wasteful extravagance in the end and the adage that 'whatever is worth doing is worth doing well' has a striking application to the subject of road building. Yet this false notion of cheapness has dominated to such an extent that engineers and road builders in Ohio can cite instances where money aggregating millions has been as good as thrown away in road improvements without producing any lasting results, unless to educate the public by experience that ultimate results are more to be desired than cheapness of construction.

"Perhaps from egotism—perhaps from zeal—I wish to leave my criterion of a good road strongly entrenched in your mind, namely; a good road can be identified, not by its first cost, but by the amount expended upon it for repairs, proportioned to the traffic.

"Good specifications are obtainable and I have no adequate reason for making this paper a minute treatise of what to do. I may help you more by warning you what not to do, for a majority of the common errors are not of omission so much as commission.

"In the matter of grading, I can pass the question of cuts, but a word about fills will not be amiss. Do not place too much trust in a fill which was partially made a generation or two ago. The older portion may be the more treacherous. Perhaps trees and brush were used in making the original fill. If they have decayed, the fill is in a honeycombed condition and likely to give way. The best method of locating voids is by puddling.

"Don't undervalue the necessity of drainage. My rule has been to use it as a precaution in dry places and as a necessity in wet places.

"I would issue three warnings with respect to concrete bases: don't use concrete that is not homogenous; don't tolerate the existence of voids; don't be satisfied with a finished surface that is not uniformly smooth. In addition to these points, one should observe all the other cautions that apply generally to concrete mixing.

"The value of the first and second warnings is apparent when you consider that the sole object of a foundation is to strengthen the natural bearing surface and transmit the burden widely and uniformly. The third caution is to prevent such projections or depressions in the concrete as shall result in a different depth of sand cushion at different points.

"The importance of this feature will be apparent after the rolling of the brick surface is in progress. An undulating surface of brick means a sounding board effect when the pavement is brought into use and a possible breaking of the bond. Mere spreading of the sand is never sufficient. It should be rolled and re-shaped repeatedly until both the surface and the density are uniform. Too often the road builder contents himself with one rolling after which he fills the depressions with loose sand and finishes the surface with a template. Each refilling should be followed by rolling, a hand roller of 350 pounds weight being most satisfactory. A soft, uncompacted sand cushion will work up between the brick, when the latter are rolled.

"In the culling of brick, good judgment is the exception. Many seeming defects, as viewed by the casual inspector, are not defects. The cull pile may well be examined for later decision on

The RETAILER

Brick Display of Real Quality

Exhibition of Tyler Building Supply Company Result of Much Study and Investigation—Manufacturers' Products Well Advertised.

The various brick handled in Louisville, Ky., by the Tyler Building Supply Co., are shown to great advantage in the office display just completed under the direction of Isaac Tyler, president of the company. The effectiveness of the display is much enhanced by the white enameled mouldings which, while they set off the numerous panels, serve at the same time to blend them in such a way that a whole wall area is merged into an admirable setting for any certain panel upon which attention may be focused.

A study of the pictures accompanying this article, though so much of the pulling power of the display lies in the arrangement of the colors which do not show in the photograph, will indicate the form in which the panels have been set up and give an idea of how variation of the size in the several panels has prevented an effect of sameness which can easily detract from such displays. Another architectural principle has been observed in the disposition of the various shades of brick in each series of panels. Invariably, though the vagaries of the sensitive plate do not always support the assertion, the darker colors are at the bottom, with the shades becoming lighter as they approach the top.

It is the white trim as much as any other one thing that makes this display a good one. That and the fact that in one instance the white is incorporated in an actual structural detail, this being the casement window, which puts life into what might otherwise be a rather heavy area of brick and black mortar. The white mouldings go to prove, too, that white trim will go with practically any brick, and serve to clinch an architect's client in his inclination in favor of white stone or terra cotta lintels, sills and copings.

The display is the work of George A. Hoertz, a

well known Louisville brick contractor, who has proved his expertness on other occasions in setting up displays of brick. Throughout, the "Peco" mortar stains have been used in staining the hydrated lime mortars that were used in the joints. Mr. Tyler, himself, is responsible for the size and placing of the panels. The two men consulted frequently on the sorts of bonds and the types of joints that would work to the best advantage.

One rather novel and successful feature of this display is the label holder just above each panel. This contains the name and number of the brick and refers in turn to a named and numbered brick, labeled with full descriptive information on the two racks which are placed conveniently in the room. This makes it possible for any employee or member of the company, who may not be thoroughly familiar with the brick the company handles, to acquaint himself with this information almost as soon as he indicates the panel to the prospective customer.

A circle seat in the center of the room is an excellent point of vantage from which to view any single panel in the whole display.

The first section of the display is made up of two panels of rough texture brick, made by the McArthur Brick Co. Both are laid up in a standard bond, the top panel being formed of the "McArthur" rough texture brick, with brown mortar in three-fourths-inch raked joints. Below, the panel is formed by the Old English rough texture brick of the McArthur Brick Co., with half-inch raked joints of purple mortar.

The next perpendicular section is formed of three panels of brick from the kilns of the Hay-Walker Brick Co.

"McArthur" brick make up the next section, a soft Turkish mission brick with three-quarter-inch struck joints in black mortar, most effective when shown in colors, though rather disappointing in the

photograph. Below is another rough texture brick, of mingled shades, in three-quarter-inch, raked joints of black mortar.

Another brick altogether is shown strikingly in the center panel of this section, Iron Spot of the Beaver Clay Brick Co.

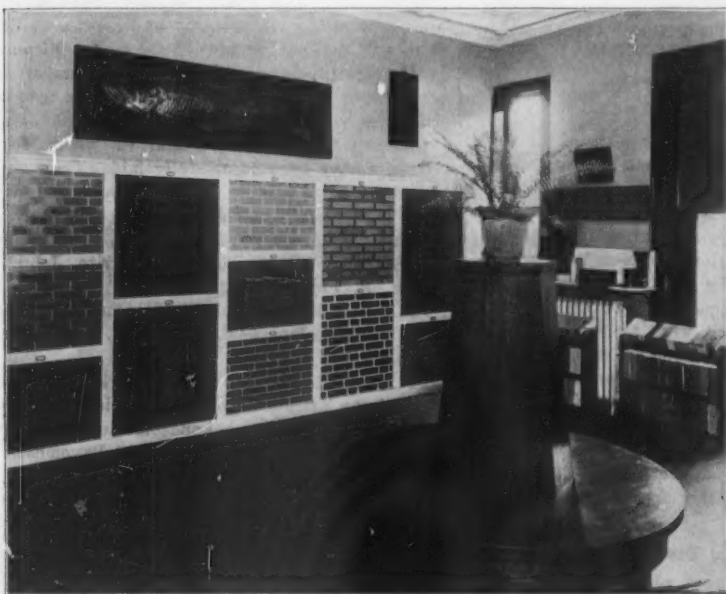
The first panel of the product of the kilns of the Federal Clay Products Co. is shown in the middle of the next section. This is shade No. 3 of the salt glaze brick of the company and, laid up in a brown mortar with a half-inch tooled joint, is very effective.

The show piece of the whole display comes next in order in making the round of the room. It occupies the center of the north side of the room and gets the best light, a direct light from the windows in the south wall. As has been said, the collection of brick represents a section of a wall with a casement window in the very center. The effect of this white casement detail is remarkable, more so when the colors in the brick surrounding it are considered. The ability of the white mouldings to draw the whole together is marked here, for although six shades of brick are used in the small wall, they are made to harmonize excellently by reason of the woodwork about the window.

This display is monopolized by the brick manufactured by the Hocking Valley Products Co., and the brick, all specimens of the "Greendale Rug" face brick, are laid up in black mortar, with five-eighths-inch raked joints, the bonds used varying according to the use made of the brick.

Further, the other side of the door is an ingenious use of the return wall construction, showing to advantage three brick made by the Hay-Walker company. The joints are all three-fourths inch and raked, cream mortar being used with Buff "Corduroy" brick in the top panel, wine colored mortar with a sort of elephant-gray brick in the middle panel, and brown mortar with a light brown brick in the lower panel. Next to this corner section are more of the "Mat" brick of the Hocking Valley company, one especially, a plum-colored brick, laid

(Continued on page 20.)



SECTION OF BRICK DISPLAY OF TYLER BUILDING SUPPLY CO., LOUISVILLE, KY.



TYLER DISPLAY OF HOCKING VALLEY PRODUCTS CO.'S "RUG" BRICK WITH CASEMENT WINDOWS INCORPORATED.

NEWS of the TRADE

The New York Market.

New York, Nov. 5.—November opens with liberal promise of better things for building material interests in the metropolitan district. In the first place, the price of all supplies is below list, with the exception of common brick and Raritan brick. In addition, manufacturers' stocks are low. Finally, the retail distributors have moderate stocks, and so far have shown no inclination to stack against winter or early winter construction.

As far as building construction in the five boroughs of New York, the five counties of East New Jersey, including Hudson, Essex, Union, Bergen and Passaic, and Westchester county to the north of the borough of the Bronx, all comprising the metropolitan district, is concerned, plan filings for the ten months just closed show an actual gain over the corresponding period last year of 1,308 buildings and an increase in value of \$2,991,100. Of this New York City showed an actual gain in number of 1,091, the total plans filed in the ten months of 1913 being 9,223, whereas 1914, containing the worst three months that American business ever has known, developed 10,314 new building plans.

When it comes to value, New York shows a loss of \$12,621,017. But this is made up by a gain of \$14,000,998 in East Jersey and Westchester, there having been vast factory extension work, office building, loft and apartment house construction in East Jersey during the last year and in apartment house construction in Westchester. Outside of New York City there was a gain in new plan filings of 217 over the same period last year. Construction in the five boroughs of New York City in the ten months just closed give a total of \$117,425,983, as compared with \$130,047,000 in the first ten months of 1913.

This slump in New York values is attributable to two causes. Cutting prices by retailers and shading by wholesalers and manufacturers' agents. Architects getting estimates have been astounded at the prices quoted, with the result that their estimates for the same given type of building have been from 5 to 15 per cent lower this year than they were last.

Hudson and Raritan brick quotations are \$5.00 to \$5.50 with \$5.25 as practically the bottom range for good brick. Portland cement brings \$1.85 a barrel alongside dock. Quotations on steel for delivery later than Feb. 1 have been recalled.

Chicago Cloud Disappearing.

The month of November is opening in fine shape as far as the granting of building permits in Chicago is concerned. The first five days of the month showed a healthy increase over the past few weeks. Most of these permits are for residences and flat buildings, ranging in height from one to three stories. While the majority of these permits are for structures to be erected on single lots, a few will be stretched out over distances measuring from one-half to an entire city block, as for instance on Nov. 5 there was issued a permit to M. B. Moran, for a three-story brick store and apartment building to be erected on lots fronting on Cottage Grove avenue, the numbers of which range from 5131 to 5145. The building, when completed, will cost approximately \$175,000. The day previous permits were issued in excess of \$500,000.

According to Mr. Hoey, of the Chicago building department, there were 824 permits issued during the month of October at an estimated valuation of \$6,742,200. This shows a decrease of \$2,571,800 when compared with October, 1913, in which month permits were issued for 1,020 buildings at an estimated value of \$9,314,000. In explaining this, Mr. Hoey declares that October of last year was an abnormal month.

Thomas Moulding of the Thomas Moulding Brick Co., reports that business is picking up a little and that collections are fair. "We have no complaint to make," said Mr. Moulding.

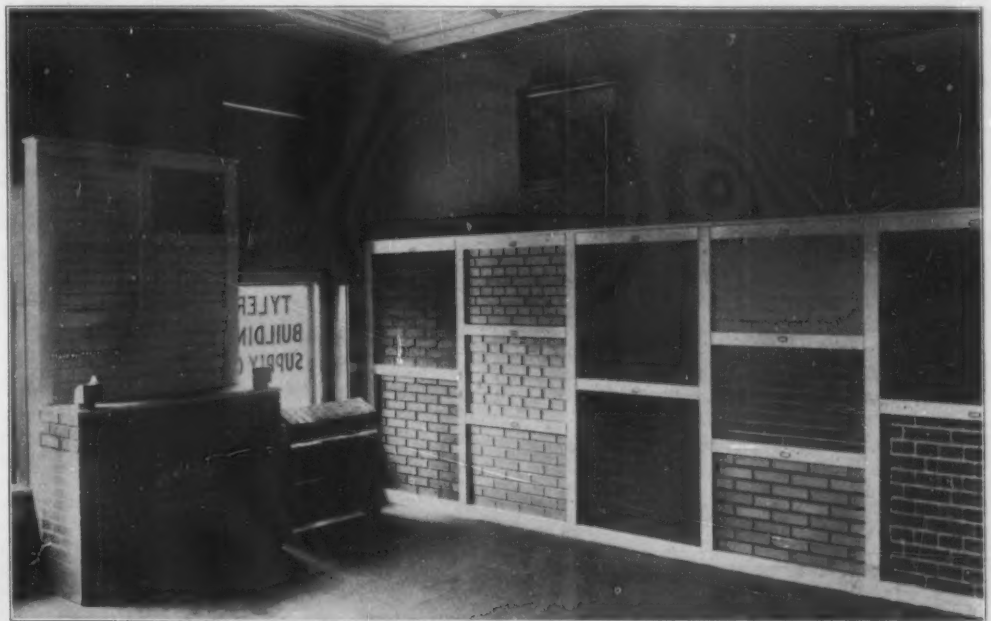
E. K. Cormack, of the Wisconsin Lime & Cement Co., says that while the volume of business is a trifle larger than it has been, the actual returns for the materials sold to supply the demand is in reality less, due to price cutting on the part of building material dealers and manufacturers. This does not only pertain to builders' supplies but is true of the lumber and hardware fields as well. "It seems that everybody in the building material business has gone on a price-cutting rampage," said Mr. Cormack.

The Milwaukee Situation.

Milwaukee, Wis., Nov. 5.—Building material dealers report that while this city has not suffered in accordance with reports from other sections of the country, business during the last month has fallen off somewhat, and practically the only jobs which have kept supply dealers busy are those which were started before the panicky times were heard of.

W. H. Pipkorn, of the W. H. Pipkorn Co., reports that while his firm is busy delivering materials there are few new orders coming in. "We cannot say that we are not busy," said Mr. Pipkorn, "and we believe that we will remain so as long as the fair weather holds up. We have received more than our share of this year's business and are optimistic as to the future of Milwaukee."

Charles Weiler, of the Western Lime & Cement Co., reports that business has been falling off



CORNER OF TYLER BUILDING SUPPLY CO.'S BRICK EXHIBIT, SHOWING CLEVER METHOD OF DISPLAYING "KEWANEE" COAL CHUTE.

The Chicago Face Brick Association reports that there were 8,162,439 face brick sold during the month of October.

Pittsburgh and Vicinity.

Pittsburgh, Nov. 5.—The continued fine weather has made it possible for retailers to do a very good business in building supplies. In many towns, September and October were excellent months for these dealers. Much house building has been started since Sept. 15. Lumber yards especially have been putting out finishing stock and buying new supplies in order to fill in for winter demand. In street and road work the season is about over and comparatively little new work has developed. Prices are not so stiff in most lines as a few weeks ago. Lumber, especially, has been cut a great deal in order to get business and there is practically no basis for prices at present.

gradually and conditions during September and October were not as good as had been expected. "Business has been poor," said Mr. Weiler, "but Milwaukee is composed of conservative and substantial people, and when conditions adjust themselves she will be one of the first cities to commence building operations on a normal scale. Manufacturers of leather and knit goods are receiving large orders, and other manufacturers are likewise busy. We ought to enter upon a prosperous year next spring."

Tewes Bros. report that business has been spasmodic all summer, good and bad in turn, and that at present there is very little material being sold.

The Pennsylvania Coal & Supply Co. report that while business on some materials has dropped off, the orders for the present season have been a trifle better than those of last year.

Are you a member of The Bourse Family?

BUILDERS' SPECIALTIES

Metal Lath Tested

Fire and Water Test Demonstrates Its Superiority.

A very interesting and instructive report of a fire and water test upon a fireproof partition, constructed wholly of metal lath with steel supporting members, has recently been issued by the Associated Metal Lath Manufacturers. The enclosure of elevator wells, staircases and other important openings in buildings of every kind, and more particularly the great sky-scrapers and hotels of modern times, has been one of the most difficult problems.

This test was conducted under the direction of Professor James F. McGregor, at the fire-testing station of Columbia University in New York City, to determine the effect produced by subjecting a typical partition to heat and water by first gradually raising the temperature of a test chamber to 1,700 degrees Fahrenheit for one-half hour and maintaining an average temperature of approximately 1,700 degrees for two and one-half hours, making the total fire test three hours, and, second, at the end of this period applying a stream of cold water at hydrant pressure of from 25 to 30 pounds through a one and one-eighth-inch nozzle for two and one-half minutes.

The partition to be tested was erected in a test house designed exclusively for partition tests. It is the standard size required by the proposed rules of the Industrial Board of New York State Department of Labor for the testing of fireproof partitions, viz., 14 feet 6 inches by 9 feet 6 inches on the outside and 9 feet 6 inches from grate to ceiling.

The foundation walls are 2 feet 4 inches above the ground level, and their inside edges support the grate. A 4-inch by 4-inch angle iron frame work supports the roof, and the walls of the building are attached to this. Draft openings and chimney flues of dimensions required are provided. Construction details are shown in the attached plate.

The partition under test which formed one side wall of the building was made in accordance with specifications.

Studding.—One inch channel iron was used on

this work weighing not less than .75 per lineal foot. The studding was set 12 inches center to center, well secured top and bottom to the construction.

Lath.—All lath used in this work was 24-gauge metal lath, painted both sides and weighing not less than three and one-quarter pounds per square yard. The partition was lathed on one side only. The lath was sewed to the channel iron with No. 18 gauge annealed galvanized tie wire, one tie every four inch vertical and one tie between each stud



MAGNIFICENT DAYTON, OHIO, RESIDENCE ARTISTICALLY AND PRACTICALLY COATED WITH "POLAR BEAR ALCA" STUCCO. HOWARD PAGE SHAW, ARCHITECT.

or vertical channel, and each tie received two twists. The sheets of lath lapped one inch on all edges.

Plastering.—The first (scratch) coat consisted of one part Portland cement, one tenth hydrated lime and two and one-half parts clean sharp sand, all parts measured by volume, a sack of cement being counted as one cubic foot. The cement and hy-

(Continued on page 19.)

Answers Cry By Enlarging Plant.

Plans Completed for New Unit to "Alca" Products Plant, Refuting Calamity Howlers.

In rebuttal to arguments of the calamity howlers and "hard times" prognosticators, announcement is made by officers of the Woodville Lime & Cement Co. that plans for a new unit to their "Alca" products plant are about completed. For the past three years this company has steadily and energetically pushed the introduction of "Alca" throughout the states of Ohio, Michigan and Indiana—the territory allotted to them by the Aluminate Patents Co., who control the patents covering the manufacturing rights of this material.

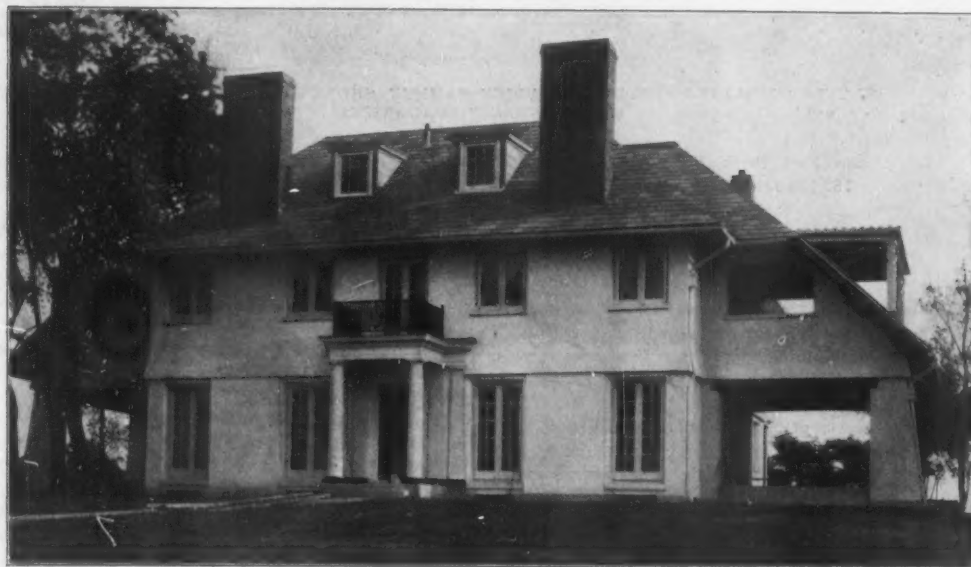
It is interesting to note that "Alca" has an

astonishingly wide range of use. It can be used for exterior stucco work, interior plastering and brick mortar work. It is composed of a mixture of calcium aluminate, an export of Cuba, and the famous hydrated lime that has been manufactured by the Woodville Lime & Cement Co. and known throughout the country for the past 15 years. Calcium aluminate is the active element of Portland cement, and its chemical and physical union with magnesium white lime makes a material which is hydraulic and which possesses the valuable asset of strengthening with age. The hydraulic properties, of course, are essential for outside stucco or for brick mortar work. For interior plastering, while not essential, it is of great benefit to the house owner when leaky pipes and tanks flood the walls. An incident of this kind would harden and really improve an "Alca" made wall.

In the city of Dayton, Ohio, there are, among others, two residences in which "Alca" products have been used successfully. In both instances "Polar Bear Alca" stucco was used on the exteriors and "Enamel Alca" plaster on the inside, the materials being furnished by the Dayton Builders' Supply Co., who represent the Woodville company in the Dayton territory. Howard Page Shaw, architect, of Chicago, designed the buildings, which were built under the supervision of Architects Schwick and William, of Dayton.

Anyone interested in "Polar Bear Alca" stucco, "Enamel Alca" plaster or "Alca" mortar can obtain a very handsome booklet prepared by the Woodville Lime & Cement Co., Toledo, O., which expounds the uses and way to use this material.

Are you a member of The Bourse Family?



"POLAR BEAR ALCA" STUCCO FOR EXTERIOR USE AND "ENAMEL ALCA" PLASTER FOR INTERIORS ARE POPULAR IN RESIDENCE SECTIONS OF DAYTON, OHIO. HOWARD PAGE SHAW ARCHITECT.

METAL LATH TESTED.

(Continued from page 18.)

drated lime were mixed together until the mixture became of a uniform color, and the two and one-half parts of sand mixed with one part of this mixture. To this was added one pound of long cattle hair per bag of cement used, which was applied with considerable pressure, getting a good key, and completely covering the metal lath; then the surface was roughened by scratching diagonally in both directions.

The second (Brown) coat was of the same mixture as the first coat, with the hair omitted, and was applied to the first coat after the latter was hardened sufficiently but before it became dry.

Immediately before the application of the second coat, the first coat was well drenched with water. The second coat was brought to a true and even surface within three-sixteenths of an inch of the face of the grounds. After this coat was darried and straightened in all directions it was lightly scratched.

The finish coat was one part Portland cement and two and one-half parts of clean sharp sand. After the brown coat had set firm and hard, but while still green (within 12 hours after the wall has been browned out), a finish coat of the above mixture was applied with a trowel and floated with a cork float to a true and even granular surface. Plenty of water was used in floating to bring to an even surface.

The above mixture was also used in building up a back plastered wall two and one-half inches over all.

Four different types of expanded metal lath, all conforming to the specification, were used.

The plaster was applied as a scratch, three inside and three outside coats having composition, thickness, and time of application as follows:

Coat Composition.	Thickness.	Time of Application.
Scratch inside as per specification	$\frac{1}{2}$ to $\frac{1}{2}$ inch	June 10, p.m.
First brown outside as per specification	$\frac{3}{4}$ to 1 inch	June 11, a.m.
Second brown outside as per specification	$\frac{1}{4}$ to $\frac{1}{2}$ inch	June 11, p.m.
First brown inside as per specification	$\frac{1}{4}$ to $\frac{1}{2}$ inch	June 11, p.m.
Second brown inside as per specification	$\frac{1}{4}$ inch	June 12, a.m.
Finish coat inside	$\frac{1}{4}$ scant	June 12, a.m.
Finish coat outside	$\frac{1}{4}$ scant	June 12, a.m.
The resultant total thickness of the wall was two and one-half inches.		

The temperature of the chamber was determined by the use of three thermo-couples connected to a Le Chatelier pyrometer. One couple was suspended through the center of the roof with its junction six inches below the ceiling, and one was placed in the middle of each side wall seven feet above the grate level, the junction being six inches from the inner face of the wall.

The frequency of firing was determined by the temperatures recorded.

The water pressure at the nozzle just before the start of the test was determined by the use of a pizometer and was found to be 25 pounds. In applying the water the stream was thrown back and forth over the whole surface and not allowed to strike continuously in one spot. The nozzle was held an average distance of two feet from the firing door.

Results of Test.

Cracks.—Four minutes after the start hair cracks along the two central channel studs and also two diagonal cracks in the lower back corner of the wall developed.

At the end of 10 minutes cracks had appeared along eight channel studs, and two diagonal cracks were noticed in the front lower corner of the partition. All cracks were emitting steam freely, which was formed by the moisture in the wall.

Additional cracks along the studs and also diagonal cracks at the corners both top and bottom developed as the test progressed.

On the inside, the wall appeared to be in perfect condition, and no cracks were noted during the first hour and one-half. At the end of this time four cracks appeared in the lower front corner of the wall. They averaged about two feet in length. Nothing further was noted until two hours and forty minutes of firing had passed when the inner surface of wall became crazed with innumerable hair cracks extending in all directions.

The maximum crack opening was one-sixteenth of an inch and subsequent examination showed that none of the cracks were deep seated.

Deflections: The partition started to deflect inwardly almost immediately after the test was started. The following table gives the deflections recorded at the center of the wall throughout the test:

Time.	Deflection Ins.	Time.	Deflection Ins.
1:00 p.m. (start)	0	2:30	4 $\frac{1}{2}$ inches
1:08	1 $\frac{1}{2}$ inches	2:40	4 $\frac{1}{2}$ inches
1:14	1 $\frac{1}{2}$ inches	2:50	4 $\frac{1}{2}$ inches
1:20	2 $\frac{1}{2}$ inches	3:00	4 $\frac{1}{2}$ inches
1:30	2 $\frac{1}{2}$ inches	3:10	4 $\frac{1}{2}$ inches
1:40	2 $\frac{1}{2}$ inches	3:20	4 $\frac{1}{2}$ inches
1:50	3 $\frac{1}{2}$ inches	3:30	4 $\frac{1}{2}$ inches
2:00	3 $\frac{1}{2}$ inches	3:40	4 $\frac{1}{2}$ inches
2:10	3 $\frac{1}{2}$ inches	3:50	4 $\frac{1}{2}$ inches
2:20	4 $\frac{1}{2}$ inches	4:00	4 $\frac{1}{2}$ inches

Deflection 15 minutes after water was applied, 3 $\frac{1}{2}$ inches.

Deflection 30 minutes after water was applied, 3 $\frac{1}{2}$ inches.

Deflection 24 hours after water was applied, 2 $\frac{1}{2}$ inches.



INSIDE VIEW OF PARTITION DAY AFTER TEST.

It will be noted that the maximum inward deflection was 4 $\frac{1}{2}$ inches and that upon cooling the wall recovered to a deflection of 2 $\frac{1}{2}$ inches.

Temperature.—The temperature recorded by the middle couple at the end of the first half hour of test was 1723 degrees Fahrenheit, and the average temperature of the three couples for the last two and one-half hours was 1746 degrees Fahrenheit.

Water.—The application of water washed away a goodly portion of the finish coat and also of the second inside coat in patches over a total area of about 16 square feet. No metal whatever was exposed.

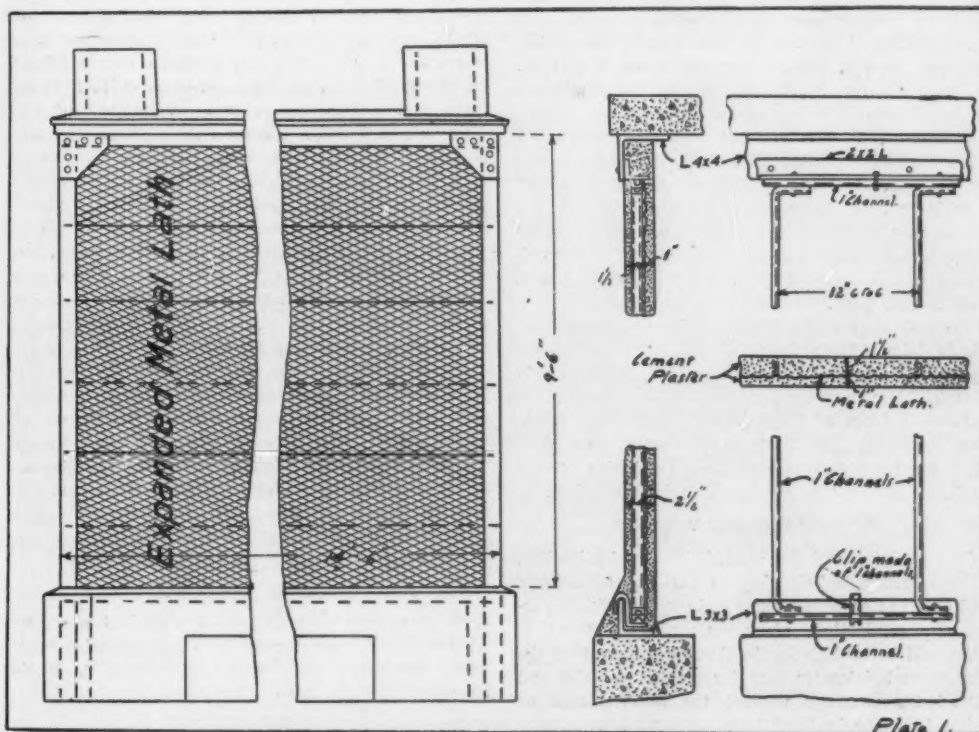
No fire, smoke or water came through the partition and after it had dried out it was firm and solid and gave a good ring when struck with a hammer.

Fifty of the leading engineers of the country, who are most deeply interested in the great fire-proofing problem, were present and inspected every detail of the test.

Temperature readings were recorded every three minutes by F. Miller, of Columbia University, from the starting of the test during the specified two and one-half hours. The average heat recorded of the three couples, respectively, being 1732 degrees, 1740 degrees and 1768 degrees Fahrenheit.

The accompanying illustration is reproduced from a photograph taken the day after the fire and water test of the entire inside surface of the partition, showing it to be structurally intact and affording practically full fire protection for the purposes designed. It would be impossible to more forcefully set forth the exclusive high value of a fire resisting partition of this type than this illustration demonstrates.

The construction of such a partition is inexpensive and available in every locality and well worthy of the recommendation to the builder by every material man, as well as the architect and engineers who are familiar with the highest achievements in the building line.



DETAIL VIEW OF METHOD OF CONSTRUCTION.

HIGHWAY ENTHUSIASTS MEET AT MILWAUKEE.

(Continued from page 15.)

and C. L. Wiggins, and Factory Representative Nick Duncan.

The Chicago Portland Cement Co. had its booth located in the east end of the hall, where three representatives were always present to distribute concrete literature and information on subjects pertaining to concrete construction. Valuable little booklets on construction were presented to the visitors. The representatives in this booth were Col. C. H. Greenleaf, C. M. Wood and John J. Commons.

The Trussed Concrete Steel Co. had an interesting display of armor plates for the protection of expansion joints, in charge of William Hussey.

The R. W. Hunt Co. was represented by a number of men who explained the manner in which this company is able to assist in the inspection and tests of materials used in construction work.

The Waupaca Sand & Gravel Co., of Waupaca, Wis., had on display samples of its sand and gravel, as well as various sizes of crushed granite. An interesting little booth was maintained by this company in charge of R. F. Whale.

The Fisher Sand & Gravel Co., of Beloit, Wis., represented by Grant U. Fisher and J. P. O'Neill, displayed their washed torpedo sand, gravel and crushed stone.

Photographic transparencies in color, showing uses of cement in various types of construction, were exhibited in the booth of the Association of American Portland Cement Manufacturers.

Ricketson & Schwarz, brick dealers of Milwaukee, had on display six different modes of pavement construction, showing the natural base, the concrete base, and the various fillers that have been recently adopted in the construction of brick pavements. Mr. Powell was in charge of this exhibit.

Milwaukee county occupied the entire stage with interesting exhibits of the various ways in which roads of different types are constructed, together with models of roads, bridges and culverts.

The corridors of the main hall were used by the highway commissions of the various states represented at the road congress for the exhibition of materials, models and illustrations.

The office of public roads of the United States Department of Agriculture exhibited a series of miniature models showing types of roads and the development of road building from the early Roman highways to the improved types of roads now in use.

While the Lehigh Portland Cement Co. did not exhibit in connection with this road congress, it was well represented by Col. W. E. Viets, S. B. Chittenden, J. G. Zimmerman, J. C. Lemberg and Charles G. Reid. Mr. Reid attended every session of the congress and assisted materially in explaining the construction of concrete roads to a number of visitors who stopped during the inspection trip to investigate the roads.

The Atlas Portland Cement Co. was also represented at the congress by a force from their sales department, among whom were D. H. MacFarland, L. G. McConnell, H. B. Kerr and J. C. Miller. Messrs. MacFarland and Miller motored to Milwaukee from Chicago, inspecting the roads while en route.

Among other building material men who attended the congress were W. H. Pipkorn, Charles Weiler, E. J. Whitnall and Otto Rathman, of Milwaukee; C. J. Pommer, of Waupaca, Wis.; George Bartlett, of the Edison Portland Cement Co.; A. A. Stade, of the Medusa Portland Cement Co.; R. H. Hughes, of the Crescent Portland Cement Co.; Rufus Brown, of Cook & Brown, Oshkosh, Wis., and Mel Helmer, of Fond du Lac, Wis.

Are you a member of The Bourse Family?

Fourth American Road Congress.

Final arrangements for the Fourth American Road Congress, to meet in Atlanta, Georgia, during the week of November 9-14, are nearing completion. All indications point to a record breaking attendance and exceptionally strong program, while the demand for exhibit space on the part of manufacturers will far exceed the supply of space available.

The Construction and Maintenance Program.

Drainage Structures—By W. F. Atkinson, State Highway Engineer of Louisiana. Discussion opened by S. D. Foster, Chief Engineer, State Highway Department of Pennsylvania.

System in Road Management—By C. J. Bennett, Highway Commissioner of Connecticut. Discussion opened by Paul D. Sargent, State Highway Engineer of Maine.

Maintenance Methods and Relation to Traffic—By George W. Cooley, State Engineer of Minnesota. Discussion opened by H. R. Carter, State Highway Engineer of Arkansas.

Convict Labor—By George P. Coleman, State Highway Commissioner of Virginia. Discussion opened by J. E. Maloney, State Engineer of Colorado.

Rights of Way—By Austin B. Fletcher, Highway Engineer of California. Discussion opened by W. S. Gearhart, State Engineer of Kansas.

Surfaces for Light Volume Mixed Traffic—By S. Percy Hooker, State Superintendent of Highways of New Hampshire. Discussion opened by Frank F. Rogers, State Highway Commissioner of Michigan.

Efficiency in Highway Organization, Centralization of Purchases—By E. A. Stevens, State Highway Commissioner of New Jersey. Discussion opened by John S. Gillespie, Road Commissioner of Allegheny County, Pennsylvania.

State Control of Road Work as a Policy—By A. N. Johnson, Former State Highway Engineer of Illinois. Discussion opened by T. H. MacDonald, State Highway Engineer of Iowa.

Engineering Supervision of Road Construction—By W. S. Keller, State Highway Engineer of Alabama. Discussion opened by R. C. Terrell, State Highway Commissioner of Kentucky.

Economics—By J. E. Pennybacker, Chief, Division of Economics, U. S. Office of Public Roads.

Educational Field for Highway Departments—By Dr. Jos. Hyde Pratt, State Geologist of North Carolina. Discussion opened by Col. Sidney Suggs, State Highway Commissioner of Oklahoma.

Heavy Traffic Roads—By Henry G. Shirley, Chief Engineer, State Roads Commission of Maryland. Discussion opened by W. A. Hansell, Superintendent of Public Roads, Fulton County, Georgia.

Grades and Excavations—By A. D. Williams, Chief Road Engineer of West Virginia. Discussion opened by Wm. R. Roy, State Highway Commissioner of Washington.

Problems of Street Construction and Maintenance—By Charles E. Bolling, City Engineer, Richmond, Va. Discussion opened by F. L. Ford, City Engineer, New Haven, Conn.

Road Binders and Palliatives—By Chief Engineer Rhode Island State Roads Commission. Discussion opened by Chas. W. Campbell, City Engineer, St. Joseph, Mo.

Possible Lines of Improvement in Contract Highway Work—By John J. Ryan, Secretary, New York State Road Builders' Association. Discussion opened by L. D. Smoot, City Engineer, Jacksonville, Fla.

The Exhibits.

The exhibits will be located in the Auditorium, a huge structure belonging to the city of Atlanta and designed especially for meetings and exhibit purposes. Taft Hall, in which the sessions of the Congress will be held, is in the Auditorium, so that the visitors and delegates may inspect the exhibits and attend the meetings without the inconvenience of going from one building to the other. All available space in the Auditorium for commercial exhibits has

been taken, as well as the entire area of Gilmer street for a distance of one city block. A temporary structure with wooden roofing and canvas sides will be erected to protect all of the exhibits on Gilmer street, and will be so arranged as to make it a continuous structure with the Auditorium. A viaduct extending from Gilmer street, a distance of two blocks, has been obtained for the exhibit of heavy machinery in operation, and already 70 per cent of this space has also been taken.

BRICK DISPLAY OF REAL QUALITY.

(Continued from page 16.)

up in three-fourth-inch, raked joints, with plum colored mortar, is a very charming bit of color.

Three shades of the Federal Clay Products Co.'s salt glazed brick occupy the three panels next to the corner section, two shades of gray in the two upper panels and a brown brick in the bottom panel, all laid in three-eighths-inch joints of mortar to harmonize and V-tooled. Next to the "Hocking Valley" brick is a section, the top panel of which is composed of a "Hay-Walker Buff Corduroy" brick in white mortar, a "Beaver Clay" brown brick in brown mortar below and a "Beaver Clay" of a darker brown at the bottom, relieved by white mortar joints, three-eighths-inch and round tooled. Two "Hocking Valley" panels occupy the next section, one a tannish "Rug" and the other a dark red matt.

The last section on this wall is filled with two panels of the Beaver Clay Brick Co.'s product, the top one the company "Tuskaston" rough texture brick, which is displayed to advantage by the three-fourth-inch raked joint of brown mortar. At the bottom is a panel of the company's dark red brick laid up in a weathered joint. A shelf in this section contains samples of the American Plaster Co.'s wall board and gypsum block "Camfield's" raggle block, "Veribest" asphalt shingles, together with exhibits of the "American" metal weather strip and the "Jamestown" screen. A nonpareil insulating brick from the plant of the Armstrong Cork & Insulating Co. is also shown, as are a number of loose salt glaze brick of the Stark Brick Co.

One other interesting part of the exhibition, also shown in the pictures, illustrates a novel method of combining displays of brick handled by the company and such other things as coal chutes. The Tyler company is agent, among other things, for the "Kewanee" coal chute. One of these has been worked into a brick panel between two windows on the south wall. A ring connected with a chain locks and unlocks the chute. A number of the brick made by the United States Brick Co. are displayed to advantage in the brick work around this chute, the various shades of reds made by that company being laid up in mortar to suit. Above the section which encloses the coal chute is a display of the enameled brick of Andrew Ramsey, the American size brick of white, cream, green and enamel, a porcelain brick of the same size, and a larger panel of the English sized white enamel brick of the same manufacturer.

Representatives of the builders in Louisville have been most complimentary of Mr. Tyler's exhibit and several of the contractors and architects of the city have gone to considerable pains to study it. It is accounted a markedly individual display and altogether successful, as well as one which the manufacturers whose bricks are there displayed should feel more than satisfied with.

The J. G. Wilson Corporation has been incorporated at Norfolk, Va., with a capital stock of \$10,000, to engage in the building material business. Norman C. MacDonald, of Buffalo, N. Y., is president.

Are you a member of The Bourse Family?

We can design Gravel Washing Plant to suit your own Requirements—

Every "S-A" Gravel Washing or Screening Plant is designed to meet special and peculiar conditions—it is designed *primarily* to pay on the investment. We study your market requirements, your probable future demands, your railroad facilities, as well as the character of your gravel, the location of the plant, etc. All these affect the financial success of the plant—and every one of our 250 plants has paid dividends on the investment.

Our Engineers are here
at your service. Write

Stephens - Adamson Mfg. Co.

Conveying Engineers

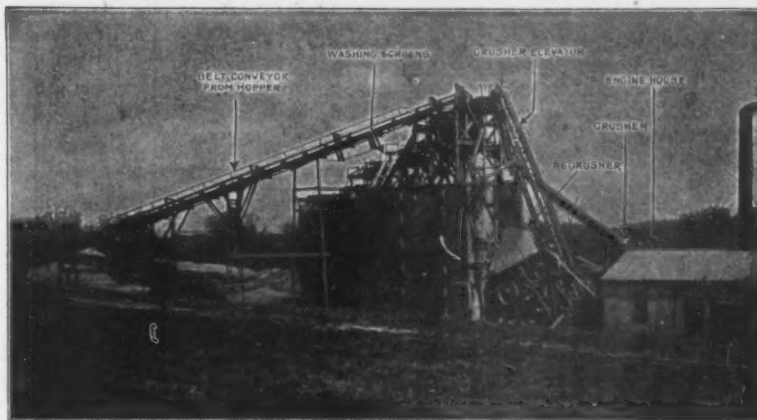
AURORA, ILLINOIS

NEW YORK
BOSTON

CHICAGO
LOS ANGELES

PITTSBURGH
SALT LAKE CITY

ST. LOUIS
TORONTO



The plant, shown above, was designed and built for a market capacity of four cars per day with an allowance for future increases. In one year, the plant had to be increased to handle ten cars daily and all extensions were paid for out of the season's profits. A steam shovel excavates the gravel and delivers into standard gauge cars hauled by a dinky locomotive. The cars dump into a track hopper from which the gravel is carried on the 24-inch by 175-foot inclined belt conveyor to the screens. The product is washed absolutely clean in "S-A" Gilbert Screens and is in great demand.

We design and equip Rock Crushing Plants, Sand and Gravel Washing Plants, Screening Plants, Storage Systems.

We manufacture Conveyors, Elevators, Transmission Equipment, Gates, Feeders, Car Pullers, etc.

ANNOUNCEMENT

THE AMBURSEN COMPANY announces that it has this day leased for a term of years the property and plant of the Consolidated Tramway Company, of Roanoke, Va., and will hereafter operate same under the sub-title of "Tramway Department."

With its seasoned Engineering and Business Organization, the Ambursen Company will develop as a special field all that is implied in the term "Short-haul Transportation." Where the Railroad ends, Short-haul Transportation begins.

Our special line of manufacture includes not only the well-known Lawson Automatic Tramway, but also the Lawson Flexible Conveyer, The Lawson Cable-Traction Railway System, etc., etc.

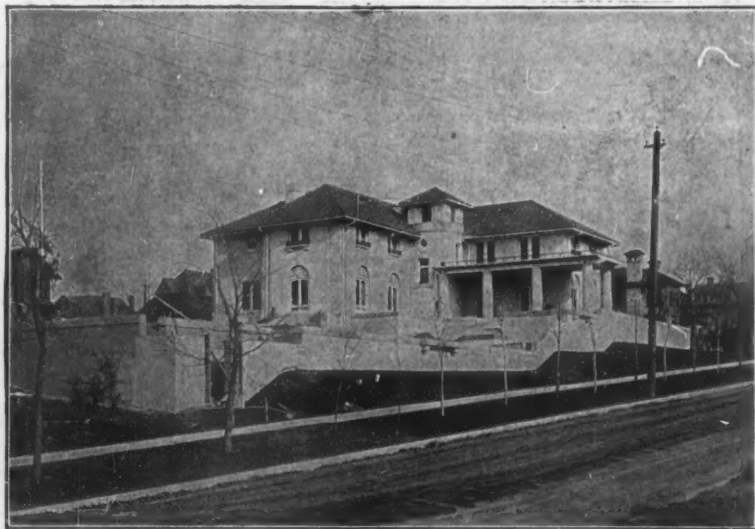
Very respectfully,

AMBURSEN COMPANY (Tramway Dep't)

61 Broadway, NEW YORK

November 2, 1914.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



MEDUSA WHITE PORTLAND CEMENT

Used on Walls and Residence of
Guilford S. Wood, Denver, Colo.

Biscoe & Hewitt, Architects

Medusa White Portland is unexcelled for building ornamentation, stucco, concrete building blocks, interior decoration, statuary, cemetery work, parks and grounds, tile, mosaic, setting marble, limestone or brick, etc.

MEDUSA IS THE FIRST TRUE WHITE PORTLAND CEMENT EVER MANUFACTURED

Medusa White Portland Cement can be used for exterior as well as interior work, is perfectly white in color and stainless. Guaranteed to be a high testing Portland, passing standard specifications. Medusa has been used by the U. S. Government in over 50 buildings in the past few years, and also in work on the Panama Canal, and shipments have been made to all parts of the globe.

Write for free illustrated and descriptive booklets and samples of

Medusa Waterproofing

Medusa White Portland Cement

Medusa Waterproofed White Portland Cement

SANDUSKY PORTLAND CEMENT CO., Sandusky, Ohio, U. S. A.



The Good Business Revival

Good business is reviving. It is against its nature to remain "slow."

The "tightness" is loosening up perceptibly. You can hear the rumble of advancing activity—the tread of the army of Good Business. The New Year promises success.

Be wise and be ready for it.

The demand upon the Building Material Dealer for good supplies will be urgent. Be able to meet it.

Ceresit products, because of their reputation, their superiority and their positive results, will be among the urgently demanded materials.

Dealers handling Ceresit Products will profit well. Will you be one of them?

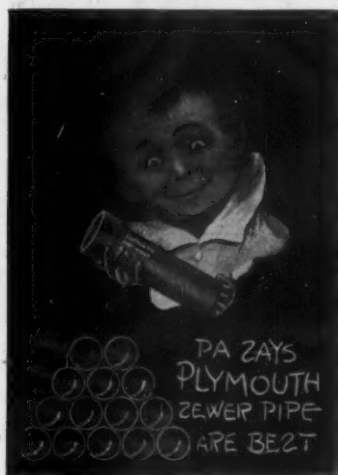
Here's an opportunity for you to tie up to Ceresit Products—to get your share of the orders the Good Business Revival is bringing.

Send today for details of our dealers proposition.



Ceresit Waterproofing Co.
924 Westminster Bldg. CHICAGO

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



PLYMOUTH CLAY PRODUCTS CO.

FORT DODGE, IOWA



IT WILL PAY YOU TO HANDLE THE MODERN FIRE-PROOF BUILDING MATERIAL

We manufacture all sizes and shapes from the highest grade shale by the most modern process, including backing up, partition, floor arches and hollow brick; also DRAIN TILE.

AMERICAN CLAY CO.
25 So. Seventh St., TERRE HAUTE, IND.

Write us for prices on "BEAR CREEK" brand White Lime and "WHITE BEAR" Hydrated Lime. Prompt Shipment.

HANNIBAL LIME CO. HANNIBAL MO.

INDIANAPOLIS CABLE EXCAVATOR CO.

Beauty Avenue and New York Street Indianapolis, Indiana

NEGLEY PATENTED EXCAVATORS

LELAND EQUIPMENT COMPANY

126-128 Pine Street San Francisco, Calif.
Agents for Arizona, California and Nevada

CHAS. T. TOPPING MACHINERY COMPANY

Agents for Western Penna. and W. Va. Bessemer Bldg., Pittsburgh, Penna.

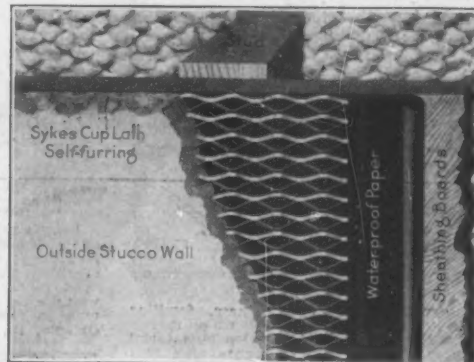
? ARE YOU A LIME, CEMENT, STONE, OR SAND AND GRAVEL PRODUCER ?

Our Service is for You We are Engineers—Designers of Sand and Gravel Washing Plants—Manufacturers of Dull's Tubular Washer, Cableway Excavators, Screens, Conveying Equipment, Pulleys, etc. See our full page advertisements in the previous and next issue of ROCK PRODUCTS AND BUILDING MATERIALS, or write today to our Chicago office.

The Raymond W. Dull Company, 1912 Conway Bldg., Chicago, Ill.

Advertise your second-hand equipment
in the Classified Department

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



A BACKBONE— not a background for plaster

Here is a lath that becomes actually imbedded in the mortar or plaster—it practically makes a reinforced wall. It furnishes a strong, rigid base—it makes your work quick, sure, dependable.



saves times, cuts costs. It can be fastened directly to the sheathing boards or studding, and a perfect key is certain. It is self-furring—another saving for you of 4 to 5c per sq. yd. over Metal Laths that require Furring Strips. It keys quickly and perfectly. It is used for Stucco Work, overcoating and also for interior plastering. It will not crack nor check.

Extra Weight Means Added Strength

The strands of Sykes' Expanded Cup Lath are wider, therefore the lath weighs more per square yard when cut from the same gauge sheets than that of other makes. For instance, our No. 27 gauge weighs 2.8 lbs. per square yard, which by comparison you will find much heavier than that of most laths in this gauge. This means extra strength, added durability.

Packed 20 square yards to the bundle. Size of sheets 18x96 inches, in gauges 27, 26, 25 and 24. Furnished with either an Anti-Rust (oil) coating, painted black, or galvanized.

Sykes' Trough Sheet Lath, undoubtedly the best inside lath made, because of its scientific design and full length corrugations. Ideal for ceilings, inside walls, mantel and tile setting. Furnished either in anti-rust (oil) coating, painted black, or galvanized. Write us for prices and free samples.

Sykes' Wall Ties, standard, 7 in. long—Sykes' Veneer Wall Ties, 6 in. long. Extra heavy galvanized, with cross corrugations. Free samples.

Sykes' Corner Beads, 6, 7, 8, 9 and 10 feet. Ten pieces to the bundle. Free samples.



Write for your copy of Sykes' Complete Specifications For Stucco on Metal Lath

We will send you a copy of our complete specifications—a booklet of vital interest to every man who does stucco work.

Sykes Metal Lath & Roofing Co.
508 Walnut St., NILES, OHIO

Put your name on margin below—tear off—Mail

The market place of the building material industry. Employment department, machinery wanted and for sale, etc. If your wants are not answered in this page, write a letter to this office.

THE FRANCIS PUBLISHING CO.
537 S. Dearborn Street Chicago, Illinois

:: THE :: BOURSE

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line.
Heading counts as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYMENT WANTED

Twenty years' experience Supply Business, familiar with details of every department, might make investment. South or Southwest preferred, location immaterial however. References furnished. Who wants man this calibre? Address Box 1017, care ROCK PRODUCTS AND BUILDING MATERIALS.

MACHINERY WANTED

WANTED TO BUY—A Rotary Press, 24,000 capacity, for Sand-lime Brick. Address Box No. 5, care ROCK PRODUCTS AND BUILDING MATERIALS.

PLANTS FOR SALE

FOR SALE—PORTLAND CEMENT PLANT
Complete 1,000-barrel dry process plant, fully equipped. Will sell any part to suit purchaser. M. BRAUDY & SONS, Grand Rapids, Mich.

FOR SALE—Fully equipped limestone property; kilns, crusher, screens, cars, drills, tools, pumps. Send postal for list and terms. Sale November 12th. Your opportunity for plant or equipment. Address W. S. SMALLEY, Assignee, Harrison Bldg., Philadelphia, Pa.

AN UNUSUAL BARGAIN

Kennedy No. 6 Gyratory Crusher, Suspended head type, manganese head and concaves, nickel steel shaft. First Class. At much less than one-half the cost new.

WILLIS SHAW MCHY CO.
New York Life Bldg., CHICAGO, ILL.

FOR SALE

Two No. 5, Style D Gates Crushers.
Excellent operative condition.
Real bargain price.
Address Box 1016, Care R. P. and B. M.

FOR SALE—SAND AND STONE PLANT.

Fifty acres of land; on the surface is a layer of lime stone, beneath this is the very best silica sand eighty feet deep; a switch has been put in, a modern stone crushing plant erected, and we are now ready for the sand plant. The owner is seventy-two years old and would either sell the plant or an interest to a younger man to share in the management. H. L. HOSSACK, Ottawa, Ill.

BUSINESS OPPORTUNITIES

TYPEWRITERS, GUARANTEED PERFECT

On Trial. All Makes.
45 to 60% off. Quality sells itself. We save you money. THE E. W. HORTON CO., Bellevue, Ohio.

RETAIL BUSINESS FOR SALE

Profitable builders' supply and grain business located in large city of eastern New York offered to hustler at bargain. Present owner retiring. Address Box 1008, care ROCK PRODUCTS AND BUILDING MATERIALS.

AGRICULTURAL LIME AND CRUSHED STONE QUARRY FOR SALE.

A well-developed lime and crushed stone quarry in Eastern Tennessee, situated on the Southern Railway, of approximately 43 acres, is now offered for sale at a very attractive price on reasonable terms. A big market exists in the territory for agricultural lime. Modern road building is now going rapidly forward, which will make a good outlet for that product. Full information and details obtained by referring to file 47533 and writing M. V. Richards, Land and Industrial Agent, Room 371 Southern Railway, Washington, D. C.

GRAVEL LAND, 56 ACRES, FOR LEASE.

Located on Cincinnati Northern R. R., near Jackson, Mich., only available deposit for 100 miles south. Low frt. to rich farm lands of Paulding and other northern Ohio counties, where no native gravel is found. Pit run with boulders crushed to two inches will find ready sale. Electric power and water available. Great opportunity right man to start with small capital. Box 1018, care ROCK PRODUCTS AND BUILDING MATERIALS.

MACHINERY FOR SALE

FOR SALE—Best empty cement bag baler, smallest price. Also brick and block machines. Address W. BARTEN, Gordon, Nebr.

FOR SALE—Two second-hand No. 8 Krupp Ball Mills, fully equipped, in excellent condition. SECURITY CEMENT & LIME CO., Hagerstown, Md.

FOR SALE—1 American Process Dryer; 1 American Clay Manufacturing Company's Model C Press. Address Box 1019, care ROCK PRODUCTS AND BUILDING MATERIALS.

FOR SALE—Four 36-inch Vertical Emery Mills for grinding gypsum or like product. Will sell these at a bargain. Write for particulars. KELLY PLASTER CO., Sandusky, Ohio.

FOR SALE—One 30 h.p. type B heavy duty gasoline marine engine, Fairbanks-Morse make, first class condition. Disposing of it to put in 55 h.p. engine. Address KING'S CROWN PLASTER COMPANY, Cedar Rapids, Iowa.

THEW TRACTION, REVOLVING STEAM SHOVEL
For Sale at a Bargain.
1/2 Yard, Fine Condition.
LOCATED IN CHICAGO WIRE OR WRITE
WILLIS SHAW MCHY CO.
New York Life Bldg., Chicago, Ill.

RAILS

all sizes—small or large lots. New and relaying. We are familiar with quarry requirements and know just what you need. Frogs, switches, splices and all track accessories. Immediate shipment from stock.

L. B. FOSTER CO.

PARK BUILDING

PITTSBURGH, PA.

IMPORTANT!

We ask the cooperation of our advertising patrons in the matter of getting changes of copy for their ad into this office at an early date.
Advertising copy for issue of the 7th should be mailed us not later than the 25th of the month preceding. Changes of copy for the 22nd issue should be mailed not later than the 10th of each month. In complying with this request you will permit of ample time in which to have your ad set and receive proof for O. K., or corrections.

The Francis Publishing Company - 537 So. Dearborn St., Chicago, Ill.

The Bourse
The Classified Advertising Department

contains the live business tips of the month. This department is carefully read by the great majority of the subscribers, as is illustrated by the large number of replies which are received through this office. Every firm who has any equipment to buy or sell should advertise in

The Bourse

N. B. S. A.

Standardization of Prices.

How many of those interested in the building supply business read the column conducted by Mr. Elton J. Buckley, appearing in our last issue under the heading of "Legal Department," and entitled "Is this Restraint of Trade?"

The substance of this article was: Is it unlawful for a manufacturer, who is a private concern, to sell his goods on the condition that they shall be resold at a certain price?

No doubt, to a great many of those who read this column, it afforded ample substantiation to a long held opinion, while to others it was perhaps the means of prompting inquiry on the subject.

The National Builders' Supply Association includes in its program, the following:

"To assist in promoting sentiment which will materialize into legislation permitting the standardization of prices." A word on this subject at this time seems to be appropriate.

Upon investigation we find that the system, or rather method, of doing business, as illustrated in the article referred to above has been followed for some time and still continues to be successfully operated in some lines, as for instance, in the June, 1914, issue of "Advertising & Selling," the statement is made by Louis K. Liggett, president of the United Drug Co., of Boston, Mass., that a certain large manufacturer of toilet necessities, etc., declines to sell a retailer who will not protect his fellow retailers' interests. This particular statement prompted an investigation into its merits at the time, and it was found that it is correct in all its details. Proceeding still further, and going to the retailer, elicited the information that this particular manufacturer secures a very large portion of the business in his line, and upon inquiry as to what may be the direct cause of this success, it was found that it was due entirely to the methods employed by that manufacturer in his relations with his customers.

As an illustration of just how this works, we find that when the retailer buys his goods, he knows that his fellow competitor is paying exactly the same price as he, and furthermore, that he will resell on a basis of the same minimum price, and what are the results? Simply the very best that can be obtained and in favor of the manufacturer, the retailer and the consumer. In favor of the manufacturer and retailer, because it promotes favorable conditions for the successful conducting of their business; and approved of by the customer because the ultimate consumer always has and always will appreciate straightforward methods. That is what is indicated in the increasing tendency to standardize things.

This subject is the point of discussion everywhere at the present time; it is to be found in meetings

where men are gathered together for the purpose of effecting improvements in trade conditions; editorials appear from time to time in the large daily and trade newspapers and the people at large are beginning to realize more and more that all losses in unproductive and unremunerative enterprises are borne by the community; furthermore, that a standard price means an open price and one that is known to all, and this in itself eliminates any danger of a standard price becoming an excessive one, but rather results in its becoming the RIGHT price.

It is to be hoped, therefore, that the National Builders' Supply Association will persevere in their efforts to bring about the results so much desired, and that its members will assist to the extent of securing the co-operation of those who may still remain from without its beneficent influence.

APPLICATIONS RECEIVED.

Applications for membership received since last issue:

Thomas Connelly Company, Chicago, Ill.
J. P. Duffy & Co., Brooklyn, N. Y.
N. J. Druceker Co., Chicago, Ill.
Uniontown Builders' Supply Co., Uniontown, Pa.
Associate members have been received as follows:
Keim Brick & Tile Co., Louisville, Ohio.
Masons Specialty Co., Chicago, Ill.

Preparations continue to go forward for the sixteenth annual convention of the association to be held in Chicago, Feb. 8 and 9, 1915. The favorable time, at which this convention is to be held, assures a big attendance and all concerned expect a very successful as well as beneficial time.

Worcester Gets New England Meeting.

The board of directors of the New England Builders' Supply Association have again decided on Worcester, Mass., as the logical place to hold their annual meeting. The sessions of the next convention will be held at the Bancroft hotel, the same place at which the retailers of the New England states assembled last February. The 1915 meeting will be held on Thursday, Feb. 18.

President Charles M. Kelly promises a good program.

French Lick Draws Brick Men.

The board of directors of the Face Brick Dealers' Association of America has just voted to hold the annual meeting of the association at French Lick Springs Hotel, French Lick, Ind., on Dec.

8, 9 and 10. The American Face Brick Association will meet at French Lick at the same time.

According to Secretary R. L. Queisser, of the dealers' association, this plan of a joint meeting is in conformity with the constitution of the association, which states that "it shall be the declared purpose of this association to hold its annual and other meetings at such time and place as those of the American Face Brick Association."

New Incorporations and Ventures.

The Builders' Supply Co., of Akron, Ohio, has increased its capital stock from \$10,000 to \$40,000.

C. W. Gould Co. has been incorporated to handle building material and fuel at Bailey, Mich. The firm has a capital of \$10,000.

The Van Smith Building Material Co. has been incorporated by D. Van Smith and Gadsden Smith at Charleston, S. C., with a capital of \$3,000.

The Everett Lumber & Supply Co., of North Baltimore, Ohio, has been incorporated with a capital of \$15,000 by A. A. Clay, G. W. Shaw, A. B. Condon, F. E. Bruml and M. E. Roberts.

Twed & Prichard Co. is a new concern at Goodridge, Minn. They are completing the erection of buildings on their property and will shortly handle all kinds of building material and concrete machinery.

Burke and Bonham has recently been granted a charter to do business at 309 Park avenue, Plainfield, N. J., as contractors and builders' supply dealers, with a capital of \$125,000. The incorporators are J. F. Burke, R. L. Bonham and K. E. Burke.

Making Trade Mark Famous.

By continually advertising their "You can't fade 'em," trade mark, officers of the Ricketson Mineral Paint Works, of Milwaukee, Wis., are creating a demand for their goods that come only as the result of strenuous effort and cumulative advertising.

Dealers in handling "Ricketson's" mortar colors testify to the fact that customers who have temporarily forgotten the trade name of these materials invariably mention the "You can't fade 'em" slogan.

"Ricketson's" mortar colors are pure and brilliant in tone, economical in application and a permanent guarantee against fading and washing and are furnished in red, brown, purple and black. The fact that quality stands behind the trade mark is significant of the successful business "Ricketson" dealers are enjoying.

A pamphlet, fully describing these mortar colors, has recently been issued.

NATIONAL BUILDERS' SUPPLY ASSOCIATION.

Chamber of Commerce Bldg.

Chicago, Ill.

Application for Membership.

The undersigned being heartily in accord with the "Constitution" and eligible to membership in the National Builders' Supply Association under requirements of Section I, Article 3 (ACTIVE), or in Section I, Article 4 (ASSOCIATE), does hereby apply for membership:

Firm name.....

Signed by.....

P. O. Address.....

Date.....

Officers.

President—Edw. K. Cormack, Chicago.
Treasurer—John J. Voelkel, New Orleans.
Secretary—L. F. Desmond, Chicago.

Directors.

J. H. Allen, Lincoln, Neb.
Charles Warner, Wilmington, Del.
C. N. Ray, Detroit, Mich.
W. F. Jahneke, New Orleans, La.
C. M. Kelly, Providence, R. I.
W. W. Coney, Cincinnati, O.
L. W. Macatee, Houston, Texas.
D. J. Kennedy, Pittsburgh, Pa.

CONCRETE

Concrete Septic Tanks

A New Sewage Disposal System for Country and Suburban Houses.

The well-managed farm of today means many household conveniences as well as labor-saving farm machinery. Back-breaking drudgery has been largely eliminated from both house and fields. Running water and the kitchen sink and bathroom have supplanted the old-time pump and open, insanitary drainage. But the most efficient disposal of sewage remained a problem until the concrete septic tank was invented. It is a simple, cheap and effective device, rapidly supplanting the dry well, with its constant menace of water pollution. In brief, there has come to the farmer his own little sewerage plant in concrete, which answers his purpose even better than large city works, for he has neither the tax nor repairs that always attach to a city sewer system.

The principle upon which the concrete septic tank operates is extremely interesting. It consists of a long, water-tight cistern, through which sewage passes very slowly and evenly. Located underground, it is warm and dark, thus affording perfect conditions for the development of the bacteria or germs which clarify and render harmless the sewage. After passing through the septic tank, the sewage is practically free from all suspended matter and has the appearance of water. From the septic tank this clear effluent is discharged into three lines of ordinary farm drain tile.

Size and Location of Tank.

While the odor from a septic tank is scarcely noticeable, it is nevertheless best to locate it at some distance from the house. Choose a spot easy to excavate so that the top of the tank can be sunk six inches below ground level and where the lines of drain tile will have sufficient fall to carry off the discharged fluid. The tank should be large enough to hold the entire sewage for one day. For a family of eight to ten people occupying a house having two bathrooms fitted with the customary appliances in the way of tubs and stationary wash-stands and downstairs the kitchen sink, a concrete tank having two compartments, each four feet long by four feet wide by four feet high, will be required. Since the top and bottom are each four inches thick and the top of the tank is six inches below ground level, dig the pit five feet two inches in depth. The walls of the tank are eight inches thick and the partition between the two compartments six inches. Therefore, the length of the pit should be nine feet ten inches and the width five feet four inches.

Making Forms and Placing Concrete.

If the earthen walls of the pit stand firm only inside forms will be needed. These inside forms are

merely boxes made of one-inch boards. Two boxes will be required to make two compartments. The outside dimensions of the boxes should be four feet square by four feet high. The boxes or forms will be placed on the freshly laid concrete floor. Holes for taking six-inch pipe should be made in the boxes, as shown in Fig. 1. The holes should be four inches from the top of the box form, measuring from the top of the hole. The concrete should be mixed in the proportion of one part Portland cement, two parts sand and four parts crushed rock or gravel. Place a four-inch thickness of concrete in the bottom of the pit to form the floor of the tank. On top of this concrete set the box forms, which should be ready for immediate use. Place the forms so that there is a space of six inches between them and an eight-inch space between them and the earthen walls of the pit. Then commence depositing the concrete for the walls and partition. As soon as the level of the concrete reaches the holes in the forms place in the holes six-inch pipes as illustrated. Then continue the concreting until even with the top of the forms.

Reinforced Top and Manholes.

Two ordinary iron manhole frames and covers may be obtained from a local dealer in building supplies. The manhole covers should fit tightly and should not be perforated. The manhole frames should be 10 inches high so that when placed on top of the forms the upper edge will be even with ground level. If the manhole frame is of less height than this, it should rest on a circular piece of one-inch board, which is nailed to the top of the form. Since the concrete roof is to be self-supporting, it will be necessary to reinforce it with a few lengths of three-eighths-inch round steel rods. There will be needed four pieces of three-eighths-inch rods, nine feet six inches long, and eight pieces five feet long.

The roof is now ready to be placed. Place the manhole frames in proper position on top of the form, and deposit the concrete to a depth of one inch and on the concrete lay the long and short bars, as shown in Fig. 2. When the bars are placed, deposit the balance of the concrete so as to bring the roof to a total thickness of four inches. As it will be covered with earth, it is not necessary to give this top surface a smooth finish; merely level the surface by striking off with a straight piece of board. The tank should now be allowed to rest undisturbed for at least two weeks. At the expiration of this time saw away the wooden top of the forms

inside of the manhole frames. Then enter the tank and remove the wooden forms, passing the lumber out the manhole opening.

While in the tank make certain that the pipes are all unobstructed and not even partially clogged with dirt or lumber. The inlet pipe is then connected to the pipe from the house and the outlet pipe joined to three lines of three-inch concrete drain tile. The drain tile should be laid about 12 inches below the surface of the ground and the joints left open; that is to say, no mortar must be used in the joints. This permits the discharged fluids to be absorbed by the surrounding soil. The drain tile lines should be laid in the form of the letter "Y" and sufficiently extended to cover a large area of ground. Average conditions require that each arm be about 100 feet long. After this is done, cover the tank with earth to the level of the manhole covers. It is now ready for use. It is sometimes the custom to plant a few shrubs around the manhole openings, thus effectually hiding all evidence of the tank.

Materials Necessary.

A tank of the size specified will require about four cubic yards of crushed rock, two cubic yards of sand and seven barrels of Portland cement. There will also be needed 78 feet of three-eighths-inch round steel rods, which can be obtained from the local blacksmith or hardware dealer. The tank can be built without skilled labor. It requires but few tools and construction methods are so simple that one man can easily build it.

An Interesting Concrete Residence.

Pouring of concrete began about October 19 for the foundations of the residence of R. L. Williamson, vice-president of the Dewey Portland Cement Co., in Mission Hills, a residence suburb of Kansas City, Mo. The house will be almost entirely constructed of cement and concrete, under the Van Guilder system, an expert coming from Rochester to superintend the work. Shepard-Belcher, the architects, are specializing in this class of houses because of the unlimited possibilities as to convenience, economy and safety.

Mr. Williamson is elaborating, with the help of the architects, many of his special ideas in his home. For instance, all the floors and the stairways will be concrete, covered with tile or hardwood; the concrete attic floor will be extended to form the cornice of moulded concrete. The roof will be of cement shingles. This roof, covering a most interesting arrangement of sleeping porches and sun porches, will have an area of about 4,000 square feet and will catch a great deal of rain water.

Also, there is a front porch 16 by 32 feet—and Mr. Williamson didn't like the notion of filling in with dirt three feet deep to lay the cement floor of that porch on. "Reinforcement rather than dirt fill," said Mr. Williamson. And then the happy idea struck him. Just the place for a cistern! So the rain caught by the big roof will flow into a cistern.

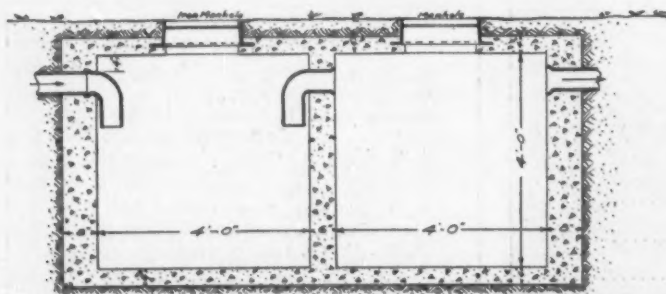


FIG. 1. CROSS SECTION INDICATING LOCATION OF PIPES.

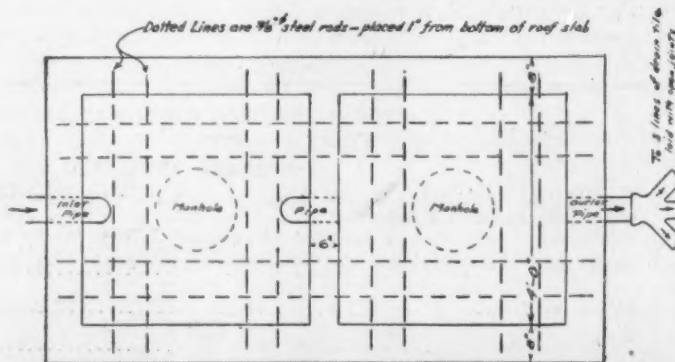


FIG. 2. PLAN SHOWING PROPER POSITION OF REINFORCING RODS.

tern six feet deep under the front porch, the water to be aerated by a special device. Quite as interesting, perhaps scientifically more advanced, is the pond which will be built under the stairway in the main living room. The purpose of this pond is to provide moisture for the atmosphere of the house, the surface dimensions of the water being calculated according to the cubic air contents of the rooms. Both inside and on the exterior there will be numerous details of cement usage, such as ornamental pillars. All the cement and other work will be done under the direction of the architects and the expert, Mr. Lewis, from the Rochester headquarters of the Van Guilder company.

A Modern River Terminal.

Reviving waterway commerce with its low freight rates and freedom from car congestion has caused the city of Minneapolis to start construction of a modern river terminal. It will be finished in the spring, about the time that the government's high dam a mile below is completed and a fine slack water harbor formed.

This terminal is being built along the lines of



RIVER IMPROVEMENTS AT MINNEAPOLIS.

the Harding standardized terminal plan which has been approved by the Upper Mississippi River Improvement Association. It is designed to accommodate 1,000-ton barges of the type of the Bernhard barge now operating out of New Orleans. A company is now building such barges at Minneapolis, so that when the dock is ready two lines will be waiting to use it.

This terminal will have three units at first and be 1,000 feet in length. Barges snub up against the sea wall and three can be loaded and unloaded at once. On top of the sea wall will run a gangtry crane for handling the cargoes.

Immediately back of this will be a spur track of a belt railway, and back of this a wagonway. Then come the storage and transfer sheds, with overhead railways in them. Back of the sheds will be another wagonway and also another spur track for transferring incoming freight to railway trains.

The entire terminal will cost only \$100,000, and its operating expense will be very low. It does away with the steamboat rouster and uses machinery instead. It also avoids the levee haul. Concrete is the chief building material.

There is another modern terminal like this nearing completion at Davenport, Ia. In both instances the warehouse sites adjoining or connected with the terminal are controlled by the city and are subject to lease to bidders.

A New Departure.

It took Alfred Hopkins, Jr., to demonstrate the adaptability of concrete as a stabilizer for his auxiliary yawl Florence flying the burgee of the Red Dragon Canoe Club of Tacony, Pa., says The Lehigh.

The concrete keel in place cost Mr. Hopkins in the neighborhood of \$25.00, as against \$220.00 for lead and \$88.00 for iron.



RIVER IMPROVEMENTS AT MINNEAPOLIS.

rather hard usage thus far, as the yawl has been aground on several occasions.

The Florence is 32½ feet long, has a beam of 10½ feet, and draws 4¼ feet of water.

The photographs show the yawl with the concrete keel. The utility and economy of concrete are daily being demonstrated for a great variety of miscellaneous purposes. It is truly an adaptable material.

Donate Materials for First Concrete Road.

Louisville, Ky., Nov. 4.—Every one connected with local firms interested in sand and gravel, concrete or cement is very much interested in an experimental stretch of concrete road on the Bardstown road, leading out of Louisville, which is the first piece of concrete roadway ever laid in Kentucky.

The piece of road is 2,000 feet long and 20 feet wide, and is laid in sections 25 feet long. All work and materials have been carefully inspected and no traffic was allowed until after the concrete had set a full 30 days.

Local material men were so much interested in the proposition that a good deal of the material for the construction of the sample road was donated by them. The Ohio River Sand Co. and the E. T. Slider Co. between them donated about 800 yards



THE YAWL FLORENCE, SHOWING CONCRETE KEEL.

of gravel and about 400 yards of sand, which was loaded free of charge at the hoppers, but the county had to do the hauling. The Kosmos Portland Cement Co. donated something like one-third of the cement and made a special concession on the balance used. The total cost after the donations were made ran to about \$4,500. This roadway is one of the heaviest traveled roads leading into Louisville, and if it holds up well under traffic it is probable that several similar roads will be laid in time. R. H. Moore, representing the Association of American Portland Cement Manufacturers, was one of the consulting engineers on the job.

NEW INCORPORATIONS.

Atica Concrete Products Co., Philadelphia, Pa.; \$5,000 to \$50,000.

Interlocking Cement Stave Silo Co.; H. M. Laubach, 4914 Underwood avenue, Omaha, Neb.; capital, \$10,000.

The Cement Products Co., Davenport, Iowa; Oscar Block, president, and Austin Crabbs, secretary-treasurer.



RIVER IMPROVEMENTS AT MINNEAPOLIS.

Silica Portland Cement Co., Phoenix, Ariz.; capital, \$1,000,000; W. K. Milligan, H. H. Faggs and L. M. Laney, all of Phoenix.

E. Wege Concrete Machinery Co., La Crosse, Wis., incorporated for \$25,000; Ernest F. Wege, George H. Gordon and John P. Christell.

Jefferson Concrete Co., Inc., New York City; capital, \$10,000; David J. Havens and John J. Halpin, New York City; Harry Halpin, Far Rockaway, N. Y.

Mettler Concrete Co., Port Angeles, Wash.; capital, \$25,000; Simon Mettler, James C. Loomis and Antonio De Guzzo. Lindsay & Redden, 204 Kuppler building, Port Angeles, are the attorneys.

Cementile Roofing Co., Columbia, S. C.; will establish plant to manufacture cementile roofing; temporarily located in building of Shand Bros. Supply Co.; Lewis A. Emerson is in charge of plant.

Tampa Hydro-Stone Manufacturing Co., 401 American National Bank building, Tampa, Fla.; J. L. Roumillat, president; purchased machinery to manufacture hydrostone and concrete products; \$20,000 capital.

A. Patrizio Concrete Co., Inc., New York City; \$10,000 capital; reinforced concrete and cement work; Florence Battocini and Astolfo Battocini, 558 Morris Park avenue; Esio Saccanelli, 221 East 33d street.

Northwestern Manufacturing Co., Sioux City, Ia.; organized to manufacture and deal in all kinds of cement products machinery; capital, \$50,000; L. L. Stamm, H. K. Hansen, J. H. Lawrence, M. L. Sears and H. S. Snyder.

J. W. Crane and R. A. Torrey, makers of cement pipe under the firm name of the Crane-Torrey Co., San Francisco, Calif., have dissolved partnership. The business will be continued by J. W. Crane under his own name.

The keel weighs 2,200 pounds, and has received

Sanitary Floors for the Dairy Farm.

Method of Laying Concrete Floors With Farm Labor.

In the voluntary movement of farmers for better milk at better prices, the first step toward improvement is the making of the barn more sanitary by laying concrete floors. The method is so simple that any man can do his own work. The cost is so small and the cash returns are so great that the floors soon pay for themselves in preventing the breeding of flies, in the saving of liquid manure, in the reduction of labor, and in the increased flow and improved quality of milk. The plan described below is for a barn in which the two rows of cows stand heels toward each other, with a driveway between. It is easily modified to the opposite arrangement. Likewise the method is adaptable to both old and new barns.

Planning and Grading the Floor.

For average conditions lay out the stalls on 3-foot 6-inch centers and 4 feet 6 inches in length from 6-inch manger wall to drop gutter. The manger is 2 feet 6 inches wide at the top and 2 feet at the bottom, with one face sloping up to the feed-alley floor. The depth is 7 inches, measured from the stanchion setting, and 8 inches from the alley floor.



SANITARY FLOOR WITH CONCRETE MANGER AND SWITCHING STANCHIONS.

The feed alley is 4 feet 6 inches wide. The drop-gutter has a width of 18 inches. It is 8 inches deep gauged from the stall floor, which is 2 inches higher than the 8-foot driveway. For establishing grade lines a carpenter's spirit level (or a water level) and a chalk line are very helpful.

To prevent possibility of the floor settling, remove all manure before grading the surface of the earthen floor. Carefully tamp back the dirt around water pipes and the drains which carry waste water and liquid manure to the water-tight concrete manure pit. Do all filling as long as possible before building the concrete floor. As a foundation for the stall floors proper, place a 6-inch thickness of coarse broken stone or screened gravel to keep the floor from direct contact with the ground. Since the stall floors are of prime importance, it is well to make them first. During this operation the unpaved driveway and alley can be used as working space. Then finish, in order named, the feed alleys, the driveways, the mangers and lastly the gutters.

Mixing and Laying the Concrete.

For the plan given, 5 feet 6 inches from the center line of the driveway stake on edge (and to line and grade) a 2 by 12-inch plank, to serve as a form for the stall floor at the gutter. Likewise set a similar board, 5 feet distant, to mold the 6-inch manger wall and stanchion setting. Bear in mind that the stall floor has a slope of 1 inch toward the gutter and that the stanchion setting rises 7 inches above the stall floor. Drainage for gutters and mangers will be provided by sloping their concrete bottoms.

Proportion the concrete 1 bag of Portland cement to 2½ cubic feet of sand and 5 cubic feet of crushed rock, or 1 bag of cement to 5 cubic feet of

clean pit gravel. At one operation lay the full 5-inch thickness of the stall floor and finish three stalls the same as one section of sidewalk. No surfacing mortar is needed. For setting patented stall divisions, follow the manufacturer's directions; for home-made divisions, make mortises by tamping the concrete around greased tapering wooden cores, which are withdrawn as soon as the concrete stiffens. A wooden float is best for finishing the floor. A steel trowel yields a surface entirely too smooth, and such a finish should always be roughened by brushing with a stable broom.

While the concrete of the three stalls is still soft, mold the stanchion setting (6 inches thick) upon it. As forms use the projecting 7-inch height of 6-inch boards toe-nailed together so as to provide another 7-inch height and a bearing plate to rest on the green concrete. These forms may be made dish-shaped for swinging stanchions. Fill the forms with mushy wet concrete, trowel the surface, round the corners, and set the stanchion holders. Repeat the operation until all stall floors are completed. The feed alleys and driveway are easily built: they are merely rough-finished sidewalks. Place the waste-water outlets in the mangers at intervals of 28 feet and give the bottom a slope of 1 inch toward each outlet for a distance of 14 feet on each side of it. The drop gutters may be drained in like

manner or can be sloped slightly in one direction for their full length. For ease in cleaning, round all angles and corners (except at the bottom of the drop gutters) by applying a 1 to 2 cement sand mortar immediately after removing the forms.

With the proportions and thickness given above, 4 bags (1 barrel) of cement, 10 cubic feet of sand (say ¾ cubic yard) and 20 cubic feet of crushed rock (about ¾ cubic yard) will lay 45 to 50 square feet of floor. The usual cost of this much material alone is \$2.50. The floor soon pays for itself many times over.

First Concrete Roads Opened.

Illinois' Initial State Aid Thoroughfares Ready for Use.

Three new stretches of road, the first concrete roads in Cook county and the first roads built under the new Illinois state aid road law, were thrown open to the public by George A. Quinlan, county superintendent of highways, Oct. 27.

Four Miles Cost \$52,000.

They were inspected and approved by Mr. Quinlan and H. B. Bushnell, division engineer of the state highway commission. Their cost is \$52,000, and the length of the three completed sections is nearly four miles.

Under the state aid road law the state and county pay equal amounts for the improvement of certain roads to be designated as state aid roads. For this work there is this year available the sum of \$276,000, with which 18 miles of concrete road will be built. Contracts have been awarded for \$188,000 of the work, and on Nov. 5 additional contracts were awarded. It is hoped that 14 miles of roadway will be completed within a short time.

The roads which were formally opened are:

Western avenue, 1½ miles north from Hazelcrest; 4½ miles to be laid.

Milwaukee avenue, northwest from the city limits, 1½ miles; 4½ miles to be laid.

South Park avenue, ½ mile north from Homewood.

On the Milwaukee avenue and South Park ave-

Crushing Brick for Concrete.

By C. M. Wood, M. E., Chicago Portland Cement Co.

An article entitled "Crushing Brick for Concrete," which appeared in a recent issue of ROCK PRODUCTS AND BUILDING MATERIALS recalled a similar experience which fell to the lot of the writer while acting as construction engineer for an irrigation company in the Rio Grande valley of Texas.

The work in question involved among other things a deep concrete pit 20' 6"x41' 9" in plan, the floor of which was 18' 6" below the ground level and 2' 3" below the mean, low water of the Rio Grande, this pit being utilized to house two double-suction centrifugal pumps, belt driven, and by thus locating the pumps in the pit we were able to materially diminish the suction lift, and at the same time take advantage on the discharge side in event the river rose, which it usually did once or twice during a season.

No rock of any description was available for concrete work and, as the company had been making its own brick for some time for use in siphon walls, culverts, and small foundations, the writer, more from necessity than choice, experimented with broken brick as a coarse aggregate for use in concrete, first using concrete thus made for survey monuments, and then for light foundations. The results of such experiments were highly satisfactory. It was, therefore, decided to utilize broken brick in making the concrete for this pump pit. Labor being exceedingly cheap (Mexicans at six and one-half cents per hour), no additional expense was entailed in the purchasing of a crusher to break the brick to a two-inch size. After a few days' experimenting along this line, the writer employed some 20 Mexican boys, in age from 10 to 18 years, paying them four and one-half cents per hour, and supplying each boy with a hammer with which to break the brick to the proper size.

The sand available for concrete was exceedingly fine, but clean, being obtained from shallow pits dug along the shore of the river; so, therefore, no endeavor was made to keep the broken brick to a uniform two-inch size; in fact, the opposite was desirable, endeavoring to grade the pieces from one-half inch to two inches.

Concrete was mixed in the proportions of one sack of cement, two-and-a-half cubic feet of sand, four cubic feet of broken brick, for footings, while for the walls the proportions were changed to one sack of cement, two cubic feet of sand, three-and-a-half cubic feet of broken brick. No waterproofing of any description was used, but the concrete was mixed very wet (in a Smith mixer) and was well spaded after being poured.

Some six months after the work was completed it became necessary to cut into some of the concrete, and it developed that such cutting was very slow when using the means at the disposal of the men, namely, sledge hammers and long striking chisels. The concrete showed upon examination that the brick bats themselves had absorbed a considerable amount of cement mortar, making a concrete exceptionally hard and absolutely impervious to water, which fact has been attested several times in the past three years when the elevation of the water in the Rio Grande has risen some 12 to 14 feet. A feature which may have had some bearing upon the fact that this pit has remained waterproof is that fresh burned bricks were used entirely for making this aggregate.

nue roads, the earth shoulders have not been placed, but the concrete work is finished. With a later addition to the Milwaukee avenue road of a stretch of seven miles reaching to the Desplaines river, it will become the longest concrete road in the state. Engineers and good roads organizations are evincing great interest in the new concrete roads.

CEMENT

American Cement Abroad.

American goods are slowly but surely increasing in public favor abroad and it is only necessary for exporters to study a little more carefully the needs and customs of the country to make that increase more rapid.

South American Market.

A good deal of interest has been naturally displayed in cement circles in a published interview in New York with William Phelps Corbett, a director of Alsen's American Portland Cement Co. Mr. Corbett, according to the statement, declared that there was a market in South America and the West Indies for 15,000,000 barrels of American cement, which would be enough to take up the over-production of domestic mills. In 1913 the total cement imports into all of South America, except Bolivia, Paraguay, Colombia, Ecuador and the Guianas, were 4,565,095 American barrels of 400 pounds each. The countries missing have one-fifth the total population of the continent.

The total Portland cement imports of Cuba, the principal consumer in the West Indies, in 1912 were 1,144,802 barrels, nearly all of which came from the United States.

Total Exports.

Total exports of cement from the United States to all quarters in August fell off heavily from last year, being 181,580 barrels, against 361,887 barrels a year ago. For eight months this year the exports were 1,466,880 barrels against 2,219,165 barrels last year. The large decrease in the eight months was partly attributable to the completion of the Panama Canal, for which large shipments of cement were previously made and were counted as exports.

Conditions in South Africa.

In attempting to do business in South Africa a new man should make a careful study of business conditions and local customs. Comparisons of South Africa with America should be carefully avoided. The term "Yankee" is quite common and no offense should be taken in connection with it. Any little courtesy that is extended a possible purchaser is fully appreciated. Many representatives of British firms make a point of asking the head of the department or purchasing agent to luncheon or dinner at least once on every trip.

No promises that the firm will not sanction should be made, and plenty of time should be taken to work each town with care. South African business methods may be somewhat different from American, but once a customer has been secured, it is comparatively easy to keep him if his requirements receive prompt attention.

Cement amounting to nearly \$180,000 was brought into the Port Elizabeth district last year. With harbor works in progress, both there and at East London, besides municipal improvements and irrigation works, these imports are likely to be largely exceeded in the near future. Nearly 80 per cent of the cement imported was supplied by Great Britain. The retail selling price for English cement is \$3.10 per barrel of 400 pounds. German, Norwegian, and Belgian cement sells at \$2.75. The duty is 30 cents per barrel, except on imports from British countries, which pay 24 cents. If American manufacturers can meet the price, there is a big market there.

Direct shipments from New York are deemed

preferable. One parcel recently shipped via Hamburg arrived at Algoa Bay just four months from the date of shipment. This is discouraging to trade and may lose customers.

The Panama Demand.

It is reported that cement and building materials find a good opening in Guatemala and Panama republics. Cement is supplied for the most part from the United States and Germany, the price of cement at Colon being 2.65 balboas per cask of 180 kilos, including customs duties (a balboa = \$1.00).

Egyptian Imports.

The imports of cement to Egypt amounted in value in 1913 to \$539,000, including \$211,000 from Bulgaria, \$157,000 from Great Britain, \$78,000 from Austria-Hungary and \$65,000 from France. Cheap cement comes chiefly from Belgium. There are two cement factories, at Alexandria and Cairo, which are beginning to compete seriously with imported cements.

DEWEY COMPANY COMPLETES DELIVERY ON K. C. ELEVATOR.

Some 15,000 barrels of cement have been supplied for the last section of the new Rock Island elevator at Kansas City, Mo., which is about completed, by the Dewey Portland Cement Co. It will have furnished for the entire work nearly 40,000 barrels. The addition was built on the site of an office building which was of solid concrete construction with a foundation extending about eight feet in the ground. This office building was moved bodily to make way for the new bins. The ground around the structure was removed and railroad steel extended underneath, which rested on railroad trucks. When the rails had finally been laid to carry the building, only a few minutes were required to move it to its new location.

COPLAY COMPANY ELECTRIFIES PLANT.

Within the past two months the Coplay Cement Co., Coplay, Pa., has made some very extensive alterations to its plant. Among these is the entire electrification of the plant, which is now considered one of the best equipped in the Lehigh Valley. With the new electric equipment the company, according to expert engineers, has a point of fine grinding. Another important feature of the plant that is now figuring with much prominence is the location of the plant on three railroads' tracks, which adds greatly to facilitating the shipping end of its products. An official of the company reports business as being very satisfactory and that the plant is being operated to its fullest capacity.

The Atlas Portland Cement Co., of Northampton, Pa., has voted to increase its capital from \$12,500,000 to \$14,000,000 and to increase its indebtedness from \$5,000,000 to \$15,000,000. John R. Morron is president and W. E. Miner secretary of the company.

The San Antonio Cement Co., San Antonio, Texas, has installed an automatic packer so as to meet the requirements of its contract with that city for furnishing 7,500 barrels per month. It is said that the new equipment will enable the company to exceed that amount by 2,500 barrels.

Lehigh's Exhibit at Road Congress.

An exhibit at the American Road Congress at Atlanta, Ga., Nov. 9-14, which will undoubtedly attract considerable attention, is that of the Lehigh Portland Cement Co.

The model, which represents a miniature concrete village, contains a miniature railroad train, which is constantly in motion. The shuttle train running from the warehouse, which represents the Lehigh Portland Cement Co.'s plant, to a wharf, conveys the idea of Lehigh being shipped all over the world.

The beauty of the exhibit and its uniqueness lies largely in the fact that every single building, road, bridge, freight car, etc., has been made according to scale. One receives very much the impression when observing this exhibit that is gained in standing at the top of a hill and looking over the surrounding country.

The roads which are modeled in the Lehigh company's exhibits are all concrete. The model illustrates the advantages of concrete roads, and while the exhibit is general in its character, it shows the adaptability of concrete to every form of construction.

PROTESTS SEIZURE OF CEMENT.

Secretary of State William J. Bryan has been appealed to by the Sandusky Portland Cement Co., Sandusky, Ohio, with reference to the action of the British authorities at Alexandria, Egypt, in confiscating 135 barrels of white cement, consigned by the Sandusky company to Hugo Wieland, a German resident of Jerusalem, Palestine. Wieland, who paid nearly \$500 in advance for the cement, has written the Sandusky company several letters protesting what he claims was an attack by the British authorities on private property.

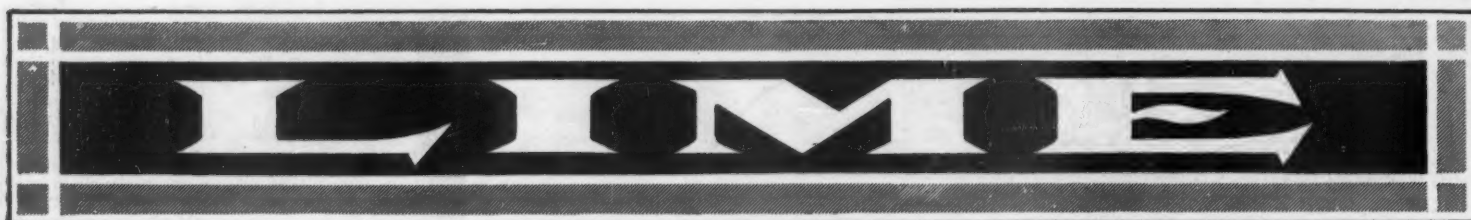
The cement, one carload, was ordered and shipped before the outbreak of the European war. When the vessel conveying the cement reached Alexandria, British authorities went aboard and confiscated any or all articles they personally deemed to be contraband, consigned to persons of nationality whose countries were at war with England.

Four smaller shipments made by the Sandusky Portland Cement Co. to India have never reached their destination. Two of these were for parties at Bombay, one for Calcutta and one for Karachi. Those to whom the shipments were consigned have written the cement company and efforts to trace the shipments are being made.

REPORTS BUSINESS BOOMING.

Receiver Guy Mallon, of the Superior Portland Cement Co., Cincinnati, Ohio, in his statement of the business of the company for the month of September reports a decided increase in sales and shipments, to such an extent the slump and slowness of the first part of the season have been entirely offset, and he renews his prediction that the company will close the year with a showing of \$50,000 profits. Indications are, he says, it will be over the figure.

This renewed activity has been showing itself steadily for the past three months. The total cash receipts of the Superior company for September amounted to \$51,088.47, and the disbursements were \$42,176.50.



The Valuation of Limestones For Calcination

BY J. S. GRASTY.*

The calcination or burning of limestone would be a very simple process but for the contained impurities. These consist of both acids and bases; and when the kiln reaches the temperature of dissociation, or so that carbon dioxide is driven off, according to the formula $\text{CaCO}_3 + \text{heat} = \text{CaO (lime)} + \text{CO}_2 \text{ (gas)}$ —the same heat which has no effect on lime, since at commercial temperatures it is practically infusible, produces incipient melting of silicates, aluminates, ferrates, etc., formed by the combination between lime on the one hand and silica, alumina and iron oxide, etc., as impurities, on the other. Though the extent of the reaction may be somewhat modified by the method of burning, yet in general, whenever other substances than its essential ingredient, calcium carbonate (CaCO_3), are present, the heat of the kiln causes these other compounds to unite with lime, and in thus forming new products—clinkers and glazes—both in the nature of slags, the result is that each impurity abstracts—as is shown below—its quota of calcium oxide from the amount that would be available for lime, in its entirety, but for their presence. In selecting a site for a quarry to supply a lime plant, it is, therefore, highly important, as shown by calculations made on the composition of the stone whose analysis follows, where it is assumed that on calcination the following compounds will be formed, namely, di-calcium silicate ($2\text{CaO} \cdot \text{SiO}_2$), tri-calcium aluminate ($3\text{CaO} \cdot \text{Al}_2\text{O}_3$), and tri-calcium ferrate ($3\text{CaO} \cdot \text{Fe}_2\text{O}_3$), to estimate the amount of CaCO_3 eliminated by impurities. Consequently, the prospective operator who fails to take this into consideration may later have much occasion for regret. This is because stone, judged from a mere inspection of its analysis, may appear to be of a better grade than it really is, if no allowance be made as indicated below for the amount of CaCO_3 lost by combination.

Limestone Analysis.

Calcium carbonate	85.66%
Magnesium carbonate	6.49%
Silica	6.65%
Alumina	1.30%
Ferric oxide	0.51%

The above analysis represents the composition of the stone burned at one of the leading lime manufacturing plants of Maryland. It is safe to say, however, that the operator employing this stone for calcination, though obtaining from his kiln a considerable amount of clinkered material, has really no adequate conception of the quantity of available carbonate it contains per ton. The clinkered material, which is covered with a more or less thin coating of glaze, is ground with lump lime, and in consequence the mixture is disposed of; but if the product obtained in this way were sold by analysis on the basis of uncombined lime (CaO), he would find it difficult, indeed, if not impossible, to hold his own with certain of his competitors who use a higher grade stone; though it is but fair to say that there are other manufacturers in the same territory that calcine stone of no better grade than his. The question, then, is how much of this stone is actually available lime, and how much combines with silica, with alumina and ferric oxide. As will

be seen from the sequel, after these impurities just mentioned have claimed their share of calcium carbonate, a rather surprisingly small amount is left.

The amount of lime taken by the silica to form di-calcium silicate is 22.08%. As perhaps it will be of interest to operators that desire to test the value of the stone that they are now burning, or anticipate employing in the manufacture of lime, the different steps in the method of calculation are given in full.

$2\text{CaO} \cdot \text{SiO}_2$ = di-calcium silicate.
Atomic weights:

$$\begin{array}{l} \text{Ca} = 40.1; \times 2 = 80.2 \\ \text{O} = 16; \times 2 = 32.0 \end{array}$$

$$\begin{array}{r} 2\text{CaO} = 112.2 \\ \text{Si} = 28.4; \times 1 = 28.4 \\ \text{O} = 16; \times 2 = 32.0 \end{array}$$

$$\text{SiO}_2 = 60.4$$

$$\text{Therefore, } 2\text{CaO} \cdot \text{SiO}_2 = 112.2 + 60.4 = 172.6.$$

$$\text{Weight of } 2\text{CaO} : \text{weight } \text{SiO}_2 :: 112.2 : 60.4, \text{ or}$$

$$\frac{2\text{CaO}}{\text{SiO}_2} = \frac{112.2}{60.4} = 1.86$$

$$\frac{\text{SiO}_2}{\text{SiO}_2} = \frac{60.4}{60.4}$$

It is seen, therefore, in a given weight of di-calcium silicate ($2\text{CaO} \cdot \text{SiO}_2$) there is by weight 1.86 times as much lime as silica. If, however, the calcareous portion of a limestone is analyzed and reported as carbonate instead of as oxide, then $1.86 = 56\%$, since in calcium carbonate (CaCO_3) the calcium oxide (CaO) contained forms 56% of the former. Consequently if $1.86 = 56\%$, the $1\% = 1.86$

$\frac{1.86}{56} = 0.0332$, and $100\% = 3.32$. Hence the amount of calcium carbonate (CaCO_3) that will be consumed in forming $2\text{CaO} \cdot \text{SiO}_2 = 6.65 \times 3.32 = 22.08\% \text{ CaCO}_3$.

The lime required by the alumina to form tri-calcium aluminate ($3\text{CaO} \cdot \text{Al}_2\text{O}_3$) in the case of a stone having the composition of that above is 3.90%.

This result is obtained as follows:

$3\text{CaO} \cdot \text{Al}_2\text{O}_3$ = tri-calcium aluminate.
Atomic weights:

$$\begin{array}{l} \text{Ca} = 40.1; \times 3 = 120.3 \\ \text{O} = 16; \times 3 = 48. \end{array}$$

$$3\text{CaO} = 168.3$$

$$\text{Al} = 27.1; \times 2 = 54.2$$

$$\text{O} = 16; \times 3 = 48.0$$

$$\text{Al}_2\text{O}_3 = 102.2$$

(Continued on Page 36.)

Seventy-five-Year-Old Lime Kiln Still in Use.

In the city of York, Pa., is located a lime kiln which has been in use for at least 75 years and is today producing for the city in which it is located a great quantity of building lime, as well as supplying to the farmers of the vicinity lime for agricultural purposes.

The kiln, which was constructed of stone secured in the neighborhood, was built in accordance with the methods of kiln construction in vogue seven decades ago and, with the exception of being repaired at several different periods and recently increased in height, it is located on the same spot and performs the same work that it did 75 years ago.

At that time the plant was owned by Samuel Owens, and 13 years later, at the age of 18, Henry Kottcamp entered the plant as an employee. After laboring industriously and securing a thorough knowledge of the correct method of burning lime, Mr. Kottcamp bought the property about 25 years ago. He retired about 12 years ago and at that time turned the property over to his son, Charles Kottcamp, who is now in possession. Charles has been in the plant since he was 15 years of age, at which time he left school in order to be of assistance to his father.

Unfortunately, the kiln, which is located within the city limits, is at least a mile from the quarry and it is necessary to haul the stone by carts, thereby increasing the cost of production and consequently limiting his field of endeavor. The quarry at present worked by Mr. Kottcamp's force produces a high grade of very hard stone.



SEVENTY-FIVE-YEAR-OLD LIME KILN WHICH HAS BEEN OPERATED BY ONE FAMILY FOR 62 YEARS.

* Virginia Geological Survey, University of Virginia.

With the QUARRIES

Crushers Operated to Full Capacity.

Street Building and Other Mediums Calling for Large Quantities of Material Bring About Splendid Market Conditions in Western Missouri Metropolis.

Kansas City, Mo., Nov. 3.—The opening of the new Union Station has caused a heavy demand for stone, to build streets approaching the station. The John Prince Crusher Co. has the contract to supply the stone for this purpose, but when it was announced recently that the station would open Nov. 1 very little of it had been sent for, for the reason that contractors laying the street had not started to work. Of course, when they started to work they wanted all their stone at once, which resulted in the John Prince Crusher Co. being swamped. However, the Rosedale Crushed Stone Co. helped them out with about 60 cars of stone, which relieved the situation to such an extent that the contract was fulfilled in good time.

W. H. Lynn, of the Leeds Crushed Stone Co., states that the company has had more business than it could handle conveniently. The company has several of the largest jobs in the city at the present time. It is supplying the stone for the St. Anthony's and Christian hospitals, for the paving of 14th and 18th streets in Kansas City, Kan., and also the stone for the Midland bridge.

The scarcity of teams and trucks has seriously handicapped the rock crushers in Kansas City. Most of the teams are employed in hauling coal at the present time and as a consequence the men who have had orders awaiting to be delivered were unable to care for them. C. J. Anderson was forced to close down one of his crushers for this reason and an ad that he ran in a newspaper for three days brought him one team. He expects, however, to be able to start his other crusher next week.

OHIO COUNTY TO CONSTRUCT MACADAM ROADS.

Road improvements to cost approximately \$400,000 will be undertaken by the commissioners of Franklin county, Ohio. The plan calls for the macadamizing of 50 miles of heretofore unimproved roads or those only partly improved with gravel. The improvements will be carried out on 21 county roads, which are not included in the intercounty or main market road system, on which state aid is obtained. As a result the entire expense will be borne by the county. The county engineer, John Peake, Columbus, O., has been directed to begin at once the preparation of plans and specifications so that contracts can be awarded early in the spring.

BIRDSBORO CO. INSTALLS BIG CRUSHER.

The Birdsboro Slag & Stone Co., Reading, Pa., has found it necessary to make changes at its plant, which only began operating about a month ago. Machinery was installed at the big cinder or slag bank of the No. 3 blast furnace and the company felt that trade would be brisk enough to guarantee a daily production of 250 tons. Instead, the business flourished to such a degree that it has been decided it will be a paying proposition to tear out the crusher first installed and substitute one of 500 tons' daily capacity. In addition to this, a steam shovel will be put to work and in the course of a few weeks everything will be running and shipments turned out. When things work properly, and without any mishaps, the crusher will grind up 50 tons of slag per hour and the conveyors and screens prepare to load it. The steam shovel will be a wonderful time and labor saver, and the operating cost will be greatly reduced by it. There is a ready market for the company's material and its books contain many orders for immediate shipments, while for next year 80,000 tons have been contracted for.

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France's Experience Proves Value of Macadam Roads.

Seven central Kentucky counties are maintaining a system of macadam roads comparable to those of France in point of smoothness and hardness. The macadam roads of France are excellent for all kinds of traffic and have been of immense benefit to agricultural interests as well as a luxury to motorists.

The cost of a macadam road is dependent upon its width and upon the cost of the construction of the subgrade and the cost of drainage. The total cost varies with the topography of the country traversed as well as with the amount of metal applied. There is an investment of \$600,000,000 in the construction of the macadam roads of France, and they are maintained at a cost of three per cent annually upon the amount invested.

Macadam, where it has been honestly and intelligently constructed and maintained, has proved a decided success. The first step is to weed out boobyism and petty politics and find out what macadam roads cost when the road funds are not stolen or squandered. There are the French roads to prove the possibility of macadam and good government. First get rid of roadmakers whose idea of roadmaking is that it is primarily a political enterprise or a source of personal profit.

Robert Johnson, a quarry man of Visalia, Cal., has sold eleven acres of quarry land to the California Granite Co., of Porterville, Cal.

The Pratt Building Material Co., of San Francisco, has installed a rip-rap plant at its granite quarry at Rocklin, Cal., for railway and highway purposes.

The R. B. Tyler Stone Co., at Duckers Station, Ky., is still in operation, but road work is nearly over for the season and the plant will run out in about 30 days.

Mines, Ltd., care George A. Morrison, 35 St. James street, Montreal, Que., has been incorporated; capital, \$20,000; quarry, etc.; Peter McKenzie and others.

It is reported that H. R. Kenyon, of Manatee, Fla., is interested in establishing a rock crushing plant in Manatee Hammock, Fla.; purchased stone crushing equipment.

The Fort Worth Crushed Stone Co., Fort Worth, Texas, has been organized with a capital stock of \$50,000. The incorporators are J. T. Hughes, C. K. Bardin and H. E. Cummings.

Stone Breaks All Records.

Production of 1913 Valued by United States Geological Survey at Over \$80,000,000.

The value of the stone production in the United States in 1913 reached the grand total of \$83,732,395, according to E. F. Burchard, of the United States Geological Survey. This is an increase of \$5,539,775, or seven per cent, over the former record-breaking figures for 1912. The value of the granite produced increased eight per cent, that of trap rock nearly 23 per cent, sandstone two per cent, marble one per cent, and limestone over five per cent. Besides the statistics of stone Mr. Burchard's report, which is issued as an advance chapter from Mineral Resources for 1913, discusses the stone deposits and resources of the States west of the Rocky Mountains, including Arizona, California, Idaho, Nevada, Oregon, Utah, and Washington. The report is illustrated by three quarry maps. This is the third of a series of three reports which discuss the stone resources of the United States; the 1912 report includes the 15 Middle States west of the Mississippi and is illustrated with six maps, and that of 1911 deals with the stone quarries east of the Mississippi and is illustrated by seven maps.

A copy of this report may be obtained free on application to the Director, United States Geological Survey, Washington, D. C. The 1912 report on Stone is also in stock for free distribution; but the Survey's stock of the 1911 report is exhausted. It is included in Part 2 of Mineral Resources for 1911, however, which is sold by the Superintendent of Documents, Government Printing Office, Washington, D. C., at \$1.10 a copy.

CRUSHED ROCK PLANT SOON READY FOR OPERATION.

The Greenville Stone & Gravel Co., whose plant is located on the river just a half mile above Williford, Ark., is fast getting ready for active operations.

Contractor H. A. Leameister, of Jonesboro, who has had a large number of hands at work for the past three months putting in the concrete and timber work for the plant, will complete his part of the contract within the next 30 days. Two large steam drills have already been installed, and the company is daily looking for the arrival of two steam shovels, which will be put to work as soon as they arrive.

Already 11 carloads of crushed rock have been shipped by the company to Bridge Junction, at the Arkansas end of the bridge at Memphis, where the Frisco is making extensive improvements in its tracks.

The Greenville Stone & Gravel Co. is one of the largest concerns of the kind in the country. The total cost of the plant will approximate \$100,000. At present only about 25 men are employed, but within the next 30 days the company expects to begin active operations, at which time more than 100 men will be at work. The capacity of the plant will be 60 cars of crushed rock per day.

The Rockpoint Limestone Lansing Co. has taken over the property of the old Wheeling Limestone Co., east of Wheeling, W. Va., and will operate the same, according to recent advices.

GYPSUM PRODUCTS

St. Louis Plastering Ordinance As Amended

An ordinance to amend Chapter 6, Article 4, of the Revised Code of St. Louis, 1912, by striking out Sections 390 and 391, relating to lathing and plastering of ceilings, walls, stud partitions and cellar or basement ceilings of buildings, and to enact in lieu thereof two new sections relating to the same subjects, to be known by the same numbers, and by adding a new section to be known as Section 391a, providing for outside plastering.

Be it ordained by the Municipal Assembly of the city of St. Louis as follows:

Section 1, Chapter 6, Article 4, of the Revised Code of St. Louis, 1912, is hereby amended by striking out Sections 390 and 391, relating to lathing and plastering of ceilings, walls, stud partitions and cellar or basement ceilings of buildings, and the following new sections relating to the same subjects, to be known by the same numbers, are enacted in lieu thereof.

Section 390. How cellar or basement ceiling is to be plastered: The ceilings over every cellar or basement of buildings of the second, third and fourth-class hereafter erected or altered of more than two stories in height shall be lathed with wire or metal lath and plastered thereon with two coats of brown mortar of good material of not less than half-inch in thickness.

Section 391. Same. Other ceilings and partitions. The plastering work in every hotel, boarding house, lodging house, tenement house, apartment house and office building hereafter erected or altered, except buildings of the first class and buildings not exceeding two stories in height, including all work over studs, partitions and ceiling joists, shall be done over metal lath or other fireproof lath or fireproof material, and shall consist of two coats of brown mortar of good material, and shall be done and left in a mechanical manner.

In every building, exceeding one story in height, hereafter erected or altered, other than buildings of the first-class, where the first floor is arranged for store or manufacturing purposes, the ceilings and partitions of the basement and first floor shall be covered with not less than two coats of brown mortar of good material at least one-half inch in thickness, done over metal or other fireproof lath.

The following are specifications for mortar, plaster and lime used in plastering such ceilings, walls, cornices and tile work:

Three-coat or scratch work to have at least seven-eighths-inch grounds or jambs, mortar to be mixed as follows:

The first or scratch coat to be mixed or tempered one part of thoroughly slaked lime to two and one-half parts of sand and one-half of hair, to be applied with sufficient pressure to insure a good rivet or clinch on upper side of lath, to be scratched thoroughly to make key to retain second coat. First coat to be thoroughly dry before applying second coat. Second coat of brown mortar for three-coat scratch work to be mixed with one part of slaked lime to four parts of sharp sand with little hair.

Lime mortar for brick or tile work to be mixed with one part lime to five sand.

For two-coat laid-off work: First coat to be mixed the same as in three-coat work. Brown mortar or second coat to be mixed or tempered one part lime to six parts of sand. Grounds should not be less than one-half inch. For white coating with lime mortar, lime should be well slaked and put through a fine screen or sieve.

To mix thoroughly before applying use two parts of lime to one-half part of plaster of paris.

For cornice work, equal parts of lime and plaster of paris should be used. All lime should be slaked at least 10 days before using. All plastering must be done straight and square to the floor line; also all plastering made flush and solid to all frames and to be straight and regular to all mouldings and casings.

When patent plasters are used, such as Acme, Climax, Royal, Laramine and other standard cement plasters: For three-coat work, lath to be spaced not less than three-eighths-inch key, joints to be broken every fifth lath, leaving space between ends of lath. First coat: To each measure of fibered plaster add two measures of clean, sharp sand, mixed thoroughly and uniformly, applied promptly with sufficient pressure to form a good rivet or clinch on upper side of lath. First coat to be thoroughly scratched to make a key to retain second coat.

Second coat to be applied when first coat is two-thirds dry, and to each measure of fibered cement plaster add two measures of clean, sharp sand, mix thoroughly and uniformly, and add sufficient water to temper to a stiff mortar. Mortar to be applied promptly with sufficient pressure, when half dry apply finishing coat. Finish coat for smooth finish. Unfibered cement plaster with sufficient water to temper to a proper consistency, troweled down with the least water possible and brushed with a perfectly dry brush.

Two-coat work: Grounds to be not less than one-half inch. Lath to be spaced not less than three-

eighths-inch key. Joints to be broken every fifth lath, leaving space between ends of lath.

First coat: To each measure of fibered cement plaster add two measures of clean, sharp sand, mixed thoroughly and uniformly. Add sufficient water to temper to proper consistency. Mortar to be applied at once with coat sufficient to make walls flush with grounds. Apply finishing coat when first coat is dry.

Section 2, Chapter 6, Article 4, of the Revised Code of St. Louis, 1912, is hereby amended by adding thereto a new section, to be known as Section 391a, as follows:

Section 391a. How outside work to be plastered: All outside plastering shall be done with Portland cement finish over metal or other fireproof lathing, and shall be two-coat Portland cement work: A first coat, well scratched and left to set, and a finish coat.

The Jeffrey Limestone Pulverizer.

The large amount of road construction and repair work, and the demand for limestone for agricultural purposes, have opened up a new source of revenue for the stone crushing plants who are equipped with a pulverizer suitable for turning out the kinds of material required. The Jeffrey Swing Hammer Pulverizer, Type D, illustrated on this page, will therefore prove worthy of investigation in this connection.

The Jeffrey pulverizer produces material one-fourth inch and under for top dressing or filler—an excellent binding material for water bound roads. This product is also used for the finer grade of concrete work. It is primarily designed and constructed for reducing limestone, shale, etc., and can readily reduce many other rocks and minerals to a powdered form, the reduction being more or less according to the speed and equipment. The Jeffrey Manufacturing Co. has issued Bulletin 132 which fully describes and illustrates the pulverizer. A copy of the pamphlet may be obtained by writing to the main office of the company at Columbus, Ohio, or any of its branch offices.

NEW PLASTER COMPANY.

The Standard Wall Plaster Company has been incorporated in Louisville, Ky., for \$10,000. The officers of the concern are T. J. Daily, president; Barney Campbell, secretary-treasurer, and Will P. Bannon, vice-president and general manager. A new plant is under course of construction at Brook and Bloom streets. The work is progressing fast and the plant will shortly be ready to place in operation. The concern, in addition to manufacturing wall plaster, will handle a general line of plasterers' supplies.

The Link-Belt Co., of Chicago and Philadelphia has just received an order from the navy department of the United States government for four steam-operated revolving locomotive cranes. Three of these cranes will be used at the Philadelphia navy yard and the fourth will be used at Charleston, Md. The locomotive cranes are all of the company's standard eight-wheel type, with slight modifications to conform with the government specifications.



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CLAY PRODUCTS

News from the Field.

New Florence Fire Brick Co., New Florence, Mo.; capital, \$50,000; S. F. Adams, W. J. Gilbert and Howard Ellis.

Fire badly damaged the machine shop and part of the grinding department of the Bloomsburg Brick Co.'s plant at Sunbury, Pa., recently; loss about \$4,000.

The Huntington Glass Works, of Huntington, W. Va., is arranging to build a plant 88x860 feet in that city. Its manager is F. D. Buskirk, of Cincinnati, O.

The Buckeye Brick Co., Wellsville, Ohio, which is controlled by Pittsburgh interests, is letting contracts for the erection of eight new kilns at its West End plant in Wellsville. The company lately bought 200 acres more of clay land in that district.

The Brazil Clay Co., Brazil, Ind., has begun the work of enlarging their plant west of the city. Several new kilns will be added, a large dry house is being erected, and many other improvements will be made that will almost double the output of the plant.

The plant of the Bristol Brick Co., of Bristol, Tenn., which was recently completed, is now operating. The daily capacity is 50,000 shale brick. Starting of the plant was delayed to some extent by failure of some special machinery to arrive on time.

Plans are now completed for the new International Brick Co.'s \$300,000 brick plant, which is to be built in the Cotton addition, El Paso, Texas. The steel and brick construction on the kilns, clay grinding mills and other buildings for the brick plans was started November 1.

The Keystone Brick Co., in which Henry Auchu, of Emporium, Pa., is largely interested, has bought the Smith farm near Pittsburgh, and will put in electric power to operate its cars. This will enable it to compete with any paving brick concern in the Pittsburgh district.

The Harbison-Walker Refractories Co., of Pittsburgh, Pa., on August 15 declared regular quarterly dividend of one-half of one per cent on common stock, payable September 1, to stockholders of record August 20. The company recently closed a large contract for refractory materials to be shipped to Cuba.

The Oakland Pressed Brick Co. has sold its plant and clay banks near Zanesville, Ohio, to the Burton-Townsend Brick, Fuel & Supply Co., of Zanesville, Ohio, of which Rufus C. Burton is president. The latter company will employ 150 men in making ornamental brick, fireproof construction brick and radial chimney blocks.

The New Lexington Clay Manufacturing Co. has bought the plant of the New Lexington Brick Co., near McArthur, Ohio, and will enlarge and improve it at once. Dan McKeever, of Columbus, Ohio, is president, and Charles A. Smith, of McArthur, Ohio, general superintendent of the new company.

An official of the Frankford Brick Works, Bridge street, near Torresdale avenue, Frankford, Pa., reports business with his concern as being very satisfactory. The plant is running to full capacity, turning out some 35,000 bricks daily. These good conditions are expected to continue well into the winter months.

Chicago Fire Brick Co., 133 W. Washington street, Chicago, Ill., will erect a plant at New Florence, Mo., costing \$50,000.

The California Fireproofing Co. will establish a plant to manufacture terra cotta fireproofing material at Antioch, Cal.

Edward R. Davis, of Huffnagle, Pa., contemplates establishing a plant at New Hope, Pa., for the manufacture of vitrified brick.

The Auburn Shale Brick Co. last week received an order for 100,000 extra fine brick to be manufactured at its plant near Gettysburg, Pa.

The Wayne Brick & Tile Co., of Wayne, W. Va., has bought a plant at Monticello, Ark., for about \$25,000 and is arranging to operate it soon.

The plant of the South Zanesville (Ohio) Sewer Pipe & Brick Co. has been purchased by the National Paving Brick Co., according to recent reports.

The Kittanning Face Brick Co., which has a large amount of business in Pittsburgh, has completed four new kilns at its plant at Kittanning, Pa., and has other improvements well under way.

The plant of the Van Ormer Brick Co., near Pitcairn, Pa., was burned 10 days ago. The conveyor, drying room, machinery and all equipment except the kilns were destroyed, with a total loss of about \$12,000.

Southern Refractory Co., Mission Ridge, Ga., organized by W. L. Greely of New York and others, has purchased the property of the Southern Clay Products Co. and will rehabilitate plant. Wm. Barker, Chattanooga, Tenn., will be manager.

The Savage Mountain Fire Brick Co., which has its headquarters in the Second National Bank building in Pittsburgh, Pa., with Clarence Overend in charge, is operating its plants at Piedmont, W. Va., and Frostburg, Md., on the basis of about 90 per cent of average production. The company has been doing a fine business in South American countries the past year.

The plant of the Nazareth Brick Co., at Nazareth, Pa., was damaged \$25,000 by a fire lately. It is leased by a company headed by Groman Brothers, of Bethlehem, Pa., and Frederick B. Franks, of Bath, Pa. The plant was totally destroyed two years ago, and about a year after it had been taken over by the Groman concern several of the kilns were destroyed by fire.

Brick Makers Hold Meeting.

At the recent joint meeting of the Refractory Brick Manufacturers' Association, the National Paving Brick Manufacturers' Association and the American Face Brick Association, held in the Fort Pitt hotel, Pittsburgh, Pa., October 21, the subject of cost accounting was given much attention. Among the speakers were George Greenwood, of the United Fire Brick Co., Uniontown, Pa., who acted as chairman, and R. D. T. Hollowell, secretary of the American association, who was secretary. Four expert accountants were given a hearing which consumed over six hours. The general joint committee, however, had no final action on any cost statement to be settled. A company of the visiting manufacturers visited the plant of the Mayer Brick Co. at Bridgeville, Pa., and in the evening its president, C. P. Mayer, entertained the manufacturers at a theatre party.

N. B. M. A. to Meet in Detroit.

As previously announced, the twenty-ninth annual convention of the National Brick Manufacturers' Association will be held at Detroit, Mich., Feb. 15 to 20, 1915. As in former years, the National Paving Brick Manufacturers' Association will meet at the same time and place, as will also the American Ceramic Society and the National Association of Clay Machinery Manufacturers. The auxiliary associations will meet Monday and Tuesday, and the N. B. M. A. will meet Wednesday, Thursday and Friday, Saturday being left open for side trips to the brick plants or such other points of interest as may appeal to the members, or as may be planned by the local committee having the entertainment of the visitors in charge. Other associations of clayworkers will be afforded every facility for meetings, if they care to join in the great yearly reunion of the clay crafts.

Opportunity will be afforded those who desire to visit and inspect the immense automobile plants, which are among the greatest manufacturing concerns in the universe. Because of this fact, Detroit may well be called the "Automobile City," though a better known sobriquet is the "City Beautiful," a very fitting and appropriate nickname, for her charms are many. No other city in the nation is more prosperous at this time. Her brick manufacturers are progressive and up-to-date. An evidence of this is the fact that they have recently incorporated under the name of the Detroit Brick Manufacturers' and Dealers' Association. The aim and purpose of this local organization is to keep properly and effectively before the community the advantages of brick as a structural material. To enable them to do this effectively, they have employed an experienced publicist, Wm. B. Wreford, late of the Detroit Board of Commerce, who will devote his entire time to the interests of the new organization, which includes all of the brick manufacturers of the city.

It is due to this up-to-date spirit of progress that the invitation to meet in Detroit has been extended and accepted, for it is believed that the local organization will be an object-lesson in the proper promotion of the brick industry that will prove of much benefit to the brickmakers throughout the land who may come in touch with it, and so be led to emulate Detroit's good example and profit thereby.

Detroit is so centrally located that it may be reached quickly and comfortably by a very large majority of the members of the association, hence it is anticipated that there will be a large attendance. The new Hotel Statler will be headquarters during the convention. All the usual deliberative sessions and entertainments will be held in the Hotel Statler, which is one of the largest and finest equipped hostilities in the country.

A most interesting program is in course of preparation, and members of the association are requested to advise the secretary of any feature of the business which they would like to have discussed. Those desiring information as to requisite of membership, etc., are requested to write to the secretary, Theodore A. Randall, at Indianapolis.

The Great Falls Sewer Pipe & Fire Proofing Co. has been incorporated at Great Falls, Mont.

SAND and GRAVEL

Specifications For Sand

The Engineering Experiment Station of the University of Illinois, which recently made extensive tests to ascertain the mortar-making qualities of various sands, recommends the following specifications. They have been prepared with the idea of giving the necessary flexibility and at the same time making them sufficiently rigid. It is not intended, however, that these specifications should be used indiscriminately for all purposes, but rather that they should serve simply as a guide in preparing the specifications for any particular piece of work. In preparing these specifications both the specifications proposed by the national engineering societies and the results of the test described in the bulletin have been taken as guides:

Definition of Sand and Screenings.—The term "sand" shall be understood to mean natural sand which will pass, when dry, a screen having one-quarter-inch clear openings. Similar material which is the product of artificial crushing shall be known as "screenings," and shall conform to the specifications for sand.

Suggested Classification of Sands.—Sands shall be classified as No. 1, No. 2, No. 3, plastering sand, and grout sand, the several grades being suitable for the following classes of work:

No. 1 sand is that required in reinforced concrete and in other work requiring a mortar of maximum strength and density.

No. 2 sand is that required in work not demanding maximum strength or density, but still requiring a mortar of high quality.

No. 3 sand is that required where high strength or density is not a controlling factor.

Plastering sand is that for use in ordinary plastering over masonry, concrete and wood or metal lath. Either No. 3 sand or plastering sand is of high enough quality for use in lime mortars. The latter sand should be used where the thickness of the mortar joint is such as to require grains of small size.

Grout sand is that for use in pavement fillers and other work requiring a thin, smooth, free-running grout.

Specifications for No. 1 Sand.

Composition.—No. 1 sand shall consist of grains from hard, tough, durable rocks, and be free from soft, decayed or friable material.

Cleanliness.—The sand must be free from lumps of clay, loam, or other foreign material. It shall not contain more than two per cent by weight of finely divided clay, loam, or other suspended matter when tested by washing in such a manner as to remove all such material without removing any of the finest sand; provided, that if the strength of the mortar made from the sand is greater than 110 per cent of the strength of a similar mortar made with standard Ottawa sand, the amount of suspended matter may reach three per cent. This suspended matter must not form a coating around the grains to such an extent that such coating is not entirely broken up and removed from the grains by sprinkling with water or in the mixing of the mortar or concrete. The sand shall be free from oily or greasy matter in any form and must contain no organic silt.

Roughness.—The grains shall have rough, unpolished surfaces to which the cement paste will readily adhere.

Size of Grains.—The grains shall be well graded in size from the finest to the coarsest. For the greatest density not more than eight per cent by weight, including the suspended matter, shall pass the No. 100 sieve, and not more than 60 per cent the No. 16 sieve. If maximum density is not essential and the mortar yields the required strength, the quantities may be increased to 12 per cent and 75 per cent, respectively.

Voids.—The voids in the dry sand, when well shaken, shall not exceed 33 per cent of the total volume of the sand.

Tensile Strength.—Mortar, in the proportions of 1:3 by weight, when tested at an age of 28 days, shall develop a tensile strength at least equal to the strength of a similar mortar made of the same cement and standard Ottawa sand tested at the same age.

Specifications for No. 2 Sand.

General Requirements.—No. 2 sand shall meet the requirements for No. 1 sand in all respects except as follows:

Cleanliness.—The suspended matter shall not exceed 6 per cent by weight when tested in the same manner as described for No. 1 sand.

Size of Grains.—Not more than 15 per cent by weight, including the suspended matter, shall pass the No. 100 sieve, and not more than 80 per cent the No. 16 sieve.

Voids.—The voids shall not exceed 35 per cent of the total volume.

Tensile Strength.—The tensile strength shall equal at least 80 per cent of that of the standard Ottawa sand mortar when tested as described for No. 1 sand.

Specifications for No. 3 Sand.

No. 3 sand shall meet the requirements of No. 2 sand, except that the suspended matter may reach eight per cent and the tensile strength be as low as 65 per cent of that of the standard Ottawa sand mortar.

Plastering sand shall meet the requirements for No. 3 sand in all respects, except that in the finishing coat it shall be of the requisite fineness to give the desired finish.

Grout sand shall meet the requirements for No. 3 sand except as follows: It shall all pass a No. 16 sieve. The voids shall not exceed 38 per cent of the total volume. The tensile strength shall be at least 40 per cent of that of the standard Ottawa sand mortar.

Pittsburgh Trade Improving.

Pittsburgh, Pa., Nov. 4.—The Winfield Sand & Mineral Co., with offices in the Second National Bank building, reports a fairly busy summer at its plants in Butler county, Pa. Trade this month is just fair and inquiries have to be dug up.

The Iron City Sand Co. put on a big new digger on the Allegheny river last month and has been working all its boats steadily. Its business, however is not so good as in 1913, due the past eight weeks almost entirely to the war scare. There is very little railroad business, but considerable big building is the bright spot in the situation.

The Keystone Sand & Supply Co., with headquarters in the Diamond Bank building, is making a big improvement to its Neville Island plant below Pitts-

burgh on the Ohio river. It is putting in a new hoist, which will be the finest piece of equipment owned by any sand company in this district, and which will give it a storage capacity of 900 cars of sand at this point. This machinery will enable it to keep its boats very busy during the digging season and then to lay them up entirely during the winter. From its Neville Island plant the company makes all its P. R. R. shipments, while its New York Central shipments are made from its big hoist at Groveton, below the city.

NEW INCORPORATIONS.

Clifton Sand and Gravel Co., Ltd., St. Catharine, Ont.; capital, \$150,000; manufacture lime and cement, brick, sand and gravel, etc.; incorporators, Henry H. Collier, 18 St. Paul street; James J. Mackan, 51 Yate street; Telle L. Belson, Henry Schott and Mabel M. Lambert, all of St. Catharine.

Bennett Gravel Co., Third & Morris avenues, Spring Lake, N. J.; capital, \$100,000; incorporators, Theo. H. Bennett, W. H. Bennett and John M. Brady, all of Spring Lake, N. J.

Chehaw Gravel & Sand Co., Montgomery, Ala.; capital, \$30,000; S. L. Brewer and others.

The Silica Sand Co., Torpedo, Warren county, Pa., contemplates installing additional equipment to cover their rapidly increasing business.

Maurice Holding Co., Inc., New York City; capital, \$100,000; sand and gravel business. A. C. Bostwick, 18 William street, New York City, and others.

Hastorf Contracting Co., Inc., New York City; capital, \$10,000; sand, gravel, etc. A. H. Hastorf, 42 Hamilton terrace, New York City.

The Perry-Victoria Sand Co., Buffalo, N. Y., has increased its capital from \$150,000 to \$250,000.

The Pond Run Sand & Gravel Co. was recently organized at Ashland, Ky. The concern is capitalized at \$5,000. The officers are J. R. Simpson, president; W. E. Falkner, secretary, and S. F. T. Griffith, manager. The sand will be dug at Chinnville, Ky., a few miles from Ashland. The company has asked for price quotations on a 50-h.p. gas engine, a rolling screen elevator, shafting and conveyors. When completed the plant will have a capacity of about 10 cars a day.

It is reported that the Lincoln Sand & Gravel Co., Lincoln, Ill., is making arrangements to add to its shipping facilities by the construction of a C. & A. Ry. switch.

The Standard Sand & Machine Co., of Cleveland, Ohio, is making tests on several large deposits of sand near Massillon, Ohio, and proposes to start an extensive selling campaign next spring. John Sadler, of Newman, Ohio, is representing the Cleveland company at Massillon.

The Marysville, Cal., plant of the Pratt Building Material Co. is busy getting out sand for the California state highway, for the Forum building at Sacramento and the California state hospital at Stockton. The company has opened a gravel pit at Marysville and has completed the erection there of rock, sand and gravel bunkers. Over 2,000 yards of sand have been delivered to the Fort Mason warehouses in San Francisco for the United States government, and 100 carloads of rock, sand and gravel will be delivered to the California Deaf, Dumb and Blind Institution at Berkeley, Cal.

SAND-LIME BRICK

The Sand-Lime Brick of Dayton

A Brief Description of the Progressive City in which the December Convention Will Be Held.

Perhaps there is no single city in the country where the sand-lime brick has been used in such a diversified number of buildings and to such an extent as in Dayton, Ohio. Dayton is one of the oldest settlements of the pioneer days and is located on the banks of the Miami river, in just about the middle of one of the most fertile agricultural regions of the world. It is nearly on the line of the old National highway, which was in the first half of the nineteenth century designed by the big politicians to reach from Washington

it is unique in having a commission form of government in which one man conducts the city's affairs upon the same basis that the general manager of a business establishment would conduct its affairs. This measure was taken for the purpose of rebuilding the city and protecting it from further flood dangers in the future.

Such is a brief description of the city that has been chosen for the December meeting (Algonquin hotel, Dec. 8 and 9) of The Sand-Lime Brick Association, and our friend and companion, W. H. Crume, who will be our guide, is one of this city's most highly esteemed citizens. In fact, every one of the delegates who attend the coming convention will find that both Mr. Crume and the sand-lime brick he manufactures are held in the highest esteem and counted in as a part of every important movement.

The accompanying illustrations are acceptable and convincing. The Egry Register Co.'s building is faced with a rough texture of wire-cut brick; 400,000 sand-lime brick are used in the backing. Pretzinger & Musselman, of Dayton, were the architects.

Wright Bros.' aeroplane factory, designed by W. E. Russ, architect, of Indianapolis, is built entirely of sand-lime brick, using about 400,000.

The Hall of Industrial Education is one of the National Cash Register Co.'s eleemosynary stunts. It contains 450,000 sand-lime brick in the backing, being faced with a grey pressed shale brick. McKim, Mead & White, New York City, were the architects, the contractors being Roche Brumer Co., of Cincinnati, Ohio.

Another illustration shows the Apple Electric Co.'s building after being gutted by fire. The one-story building shown in the foreground had all of its walls constructed of sand-lime brick. The three-story building to the right has its main walls of sand-lime brick faced with vitrified brick. The fire destroyed all of the machinery and contents and much of the metal was melted. The inside course of brick exposed directly to the fire burned in spots one-eighth inch to one-quarter inch deep without developing any serious cracking or other defects. The three-story building has been restored since the fire, with the original walls intact and without any attendant expense.

Here are some examples of the practical achievements of sand-lime brick, and there are many more in Dayton which can be contemplated and adjusted with good effect; for with the broader knowledge of such things developed in the minds of the general public the sand-lime brick industry will grow more prosperous wherever that very excellent product is obtainable.

The Illinois Architects' License Law.

The report of Francis M. Barton, secretary of the Illinois State Board of Examiners of Architects, which was presented before the Illinois State Convention of Licensed Architects, held in Chicago on Oct. 7, contains some interesting data. In this report the general policy of the board is outlined, and the practical effects of the architects' license law are noted.

The present board holds that only a licensed architect can practice in or from Illinois, and that his license is not transferable or negotiable. Any combination formed for the practice of architecture, except between licensed architects, is illegal and any licensed architect who assists others to practice, who have no license, is guilty of dishonesty, as provided in the act, and should have his license revoked.

The Illinois State Board of Examiners of Architects has been in existence for 17 years, but there was no Supreme Court decision until the present board assumed office, and practically no court action of any importance that would give to the board a precedent to follow.

The board proposes that at least eight cases of different forms of violation of the act shall reach the Supreme Court inside of the next year, at which time the courts will definitely settle forever any question as to the proper interpretation of the wording of the act, that is, the rights of the architect and the rights of the public; and when this has been accomplished, then the enforcement of the act will be a more simple matter.

A word regarding the "City Ordinance" being



HALL OF INDUSTRIAL EDUCATION.

City to San Francisco Bay. The road was, in fact, constructed as far as Vandalia, which was at that time the capital of the state of Illinois. Then the highway idea was superseded and the Vandalia railroad, reaching to the east bank of the Mississippi river and paralleling the highway from Columbus, Ohio, to Indianapolis, and thence to St. Louis by way of Vandalia, caused all interest to be lost in the further extension of the highway.

But while the highway was in active operation it made the great path to the East and to the West, which had a good deal to do with the early growth of Dayton. Then the Miami and Erie canal was built through Dayton, affording navigation to the Ohio river on the south and to Lake Erie on the north, and this added to the growth of the village into the city of Dayton. It has always been a prominent commercial town and a great deal of wealth has been created and accumulated there.

Nearly two years ago the city suffered enormously by reason of a flood of the Miami river, which threatened its utter destruction, and today



WRIGHT BROS.' AEROPLANE FACTORY.



APPLE ELECTRIC CO. BUILDING GUTTED BY FIRE.

violated by any architect may be expedient at this time. The board is a state board, and as different cities and towns have different ordinances, the board cannot revoke an architect's license because he violated the city ordinance, when the same architect could have built the same structure in other towns of the state without violating any ordinance. Therefore all matters pertaining to incompetence or recklessness must be based only on violations of good engineering practice.

The present members of the board have agreed that any attempt made by anyone at this time to have the act changed will be considered inadvisable.

The Supreme Court has just held that the act is constitutional, which is the only litigation of any real value the board has had in 17 years, and any change in the wording of the act would render this decision worthless, as it would not apply to an act which has been changed. The architects and public must then wait until the new or changed act is held constitutional in order to enjoy the same security they now have.



EGRY REGISTER CO. BUILDING.

THE VALUATION OF LIMESTONES FOR CALCINATION.

(Continued from page 30.)

Therefore, $3\text{CaO} \cdot \text{Al}_2\text{O}_3 = 168.3 + 102.2 = 270.5$.
 Weight of CaO : weight Al_2O_3 :: 168.3 : 102.2, or
 $\frac{3\text{CaO}}{168.3} = \frac{102.2}{168.3} = 1.65$

$\frac{\text{Al}_2\text{O}_3}{102.2}$

Then, by the same process of reasoning as in the preceding paragraph, $1.65 = 56\%$ and $1\% = \frac{1.65}{56} = 0.03$

0.03, while $100\% = 0.03 \times 100 = 3$.

Therefore the amount of CaCO_3 that will be utilized in forming $3\text{CaO} \cdot \text{Al}_2\text{O}_3 = 1.30 \times 3 = 3.90\%$.

If sufficient temperature is attained in the kiln, the ferric oxide (Fe_2O_3), during the process of calcination, will combine with lime (CaO), just as has been shown in the alumina and silica, to form $3\text{CaO} \cdot \text{Fe}_2\text{O}_3$. The amount of calcium carbonate that will be required to form this new compound is less than 1%, or, to be exact, 0.96%, because of the small percentage of ferric oxide. This result is arrived at as follows:

$3\text{CaO} \cdot \text{Fe}_2\text{O}_3$ (tri-calcium ferrate).

$\text{Ca} = 40.1; \times 3 = 120.3$

$\text{O} = 16; \times 3 = 48$

$3\text{CaO} = 168.3$

$\text{Fe} = 55.9; \times 2 = 111.8$

$\text{O} = 16; \times 3 = 48$

$\text{Fe}_2\text{O}_3 = 159.8$

Therefore, $3\text{CaO} \cdot \text{Fe}_2\text{O}_3 = 168.3 + 159.8 = 328.1$.

Weight of 3CaO : weight Fe_2O_3 :: 168.3 : 159.8.

$\frac{3\text{CaO}}{168.3} = \frac{159.8}{168.3} = 1.05$

$\frac{\text{Fe}_2\text{O}_3}{159.8}$

Then, by the same process of reasoning as in the case of di-calcium silicate ($2\text{CaO} \cdot \text{SiO}_2$), $1.05 = 56\%$, 1.05

and so $1\% = \frac{1.05}{56} = 0.01875$, and consequently $100\% = 0.01875 \times 100 = 1.875$.

Therefore the amount of CaCO_3 that will be consumed in forming $3\text{CaO} \cdot \text{Fe}_2\text{O}_3 = 0.57 \times 1.875 = 0.96\%$.

Totaling the several amounts of CaCO_3 consumed from the 85.66% as shown by analysis, we have:

$2\text{CaO} \cdot \text{SiO}_2 = 22.08$

$3\text{CaO} \cdot \text{Al}_2\text{O}_3 = 3.90$

$3\text{CaO} \cdot \text{Fe}_2\text{O}_3 = 0.96$

26.94

As 85.66% represents the amount of calcium carbonate as shown by analysis, and 26.94% the quantity as shown by calculation, taken up by the impurities, silica, alumina and ferric oxide, then the remainder available for lime = $85.66 - 26.94$, or or 58.72% CaCO_3 . In a ton of this limestone the available calcium carbonate for manufacturing lime is, therefore, $2240 \times 58.72\% = 1305.33$ lbs., and since this will yield, on burning, 56% of its weight of lime, then the amount of uncombined lime yielded from a ton of this stone is 730.99 lbs., or nearly 33%, or 25 less than the maximum (56%) possible in the instance of a limestone free from impurities, the diminution in this case being due, as shown, to the presence of impurities, which, while deleterious in a stone employed for calcination, is even more disadvantageous, as will be shown in a subsequent article, in limestone used for fluxing purposes.

GOODRICH TIRES AVERAGE 5707.9 MILES IN TEST.

"A remarkable service record has been established by Goodrich Safety Tread Tires at Washington, D. C.," says an official of the B. F. Goodrich Co., Akron, Ohio.

"The Terminal Taxicab Co., Inc., of Washington," says that official, "purchased 21 34-by-4-inch Goodrich Safety Tread Tires last January, and kept complete records on service delivered by these tires.

"Now, a report of detailed figures shows that these twenty-one tires had averaged 5,707.9 miles up to and including June 16, and that nine of them at that time were still in service and delivering even greater mileage than this high average.

"The continuous starting and stopping of a taxicab during the day's activity is the hardest and roughest service to which a tire can be subjected. In fact, the taxicab test is the supreme test for any tire and the showing made by Goodrich Safety

Treads in this severe day-to-day grind is further proof of the wonderful mileage and service delivered by the Safety Tread construction.

"It is the five-bars and cross-tie—tough rubber fingers which grip the road at the same time that they deliver extra wear—which are accountable for Goodrich Safety Tread extra mileage, as shown at Washington."

Are you a member of The Bourse Family?

The BUILDERS' POET

THE MANTLE OF THE SLAIN.

I

The march of moaning multitudes beats dreary on the ears,
 The heads droop low, the feet drag slow to the falling tears;
 No hope of victory's guerdon gleams bright before their eyes
 And their only spoil is ceaseless toil and endless sacrifice.

II

Theirs is the unshared burden of labor and strife and pain,
 On shoulders bent, falls the mantle rent—the mantle of the slain;
 Yet forward through years unending the weary way is trod,
 Till the tired feet, hear the last retreat of the trumpeter of God.

THE COURAGE OF DISCONTENT.

I

Where the workers throng in the market place,
 And battle for bread in the upward race
 To gain the goal of ambition's fire
 And reach the hope of the heart's desire;
 Few of the many upon the road
 Shoulder defeat and bear the load;
 They are the workers whose life is blent
 With the virile courage of discontent.

2

In every office you'll find him there,
 The man with the thin and turning hair;
 Faithful and loyal in thought and act,
 In every phase of his work exact;
 But satisfied, content, secure
 In the happy thought of position sure;
 Plodding along till old and bent
 Through lack of the courage of discontent.

3

Hope is the spur that goads to speed,
 And quickens the pace in time of need;
 Work is the weapon that kills defeat,
 When tempered true in ambition's heat;
 But the man content and afraid to dare
 Is drowsily drifting unaware;
 To him is this message of warning sent,
 HE needs the courage of discontent.

AUTUMN

Each day the evening shadows earlier fall,
 The leaves, death stricken, fill the chilling air;
 Gray streaked, the sky lies dark'ning over all,
 And wind swayed trees sigh sullen everywhere.

The death throes of the Summer's gay array
 Of life, full flooded with its joyous song,—
 No more the birds sing forth their roundelay,
 No more the south winds cheer the night along.

But hold! Why weep and mourn departed joys,
 Why sigh for Summer's glories now no more;
 Death is but sleep in God's eternal poise,
 Another summer waits when night is o'er.
 —Frank Adams Mitchell.

ANNOUNCEMENT

The Great Annual Cement Show Will Be Held February 10-17, 1915, in the Coliseum, at Chicago. The News of This Exhibition Will Be Featured, and An Authentic Record of the Show Be Published in the Daily Editions of Rock Products and Building Materials.

The Chicago Cement Show

The Chicago Cement Show is the only show of National scope to be held this year. The exhibits are to be more comprehensive than ever before, and the reservations already requested indicate that this year will be the greatest year of the exhibition. A publicity campaign is now under way insuring the fact that every contractor, engineer, architect, manufacturer, producer, retailer and all others interested in the great concrete industry will be informed from time to time of the important features. In conjunction with the show, the following associations will hold their regular meetings: The National Builders' Supply Association, The Illinois Association of Municipal Contractors, The National Association of Sand and Gravel Producers, The American Concrete Institute, The National Conference on Concrete Road Building, The Interstate Cement Tile Manufacturers' Association and the Illinois Lumber and Builders' Supply Association.

The Daily Rock Products and Building Materials

The Cement Show Daily paper, published by ROCK PRODUCTS AND BUILDING MATERIALS, will be issued each day and will contain all the live news of the show as well as a report of the conventions which will be held in Chicago at that time. The daily program, the list of exhibitors, a classified business directory, — are important factors in making this daily paper a necessity to every visitor. The dailies will be thoroughly distributed at the show proper, by a dozen men of the ROCK PRODUCTS AND BUILDING MATERIALS staff. Everybody who enters the door of the Coliseum will be handed a copy and at the numerous association meetings. A specially selected list comprising thousands of names and including the entire subscription list of the monthly ROCK PRODUCTS AND BUILDING MATERIALS will be mailed copies, so that the entire country will be blanketed with the news of the Chicago Cement Show and the announcements of the advertisers in the paper.

The show is held just before the opening of the big construction season and the men who attend come to buy equipment and materials for the coming year. Inventories have been taken—"more supplies and new machinery are necessary." Thus the live men of the industry will be focused at one point at this time. An advertisement in the Dailies will reach the best men at the best time. It will have the combined force of a personal letter and a trade journal advertisement. It will be a salesman, and bring direct results.

There are a number of special features of the Dailies which should be of particular interest to prospective advertisers and which will gladly be furnished on request. Just drop a line or mail the coupon below and we will be pleased to tell you of some further reasons why publicity at the Cement Show will bring good profits to your company.

ROCK PRODUCTS AND BUILDING MATERIALS,
537 S. Dearborn Street, Chicago, Illinois

Without any obligation on our part, please give us more detailed information concerning the Chicago Cement Show and the Daily Rock PRODUCTS AND BUILDING MATERIALS.

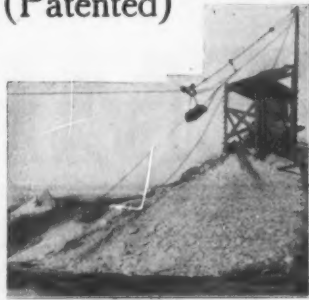
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Excavator**

Known for its wide area of operation and efficient excavation of either wet or dry material. Machine is always under positive control of one operator.

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Undercut Overcut Duplex
Plain or Special

SCREENS & ELEVATORS
Everything for handling Sand, Gravel and Crushed Stone

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Duplex Bin Gates



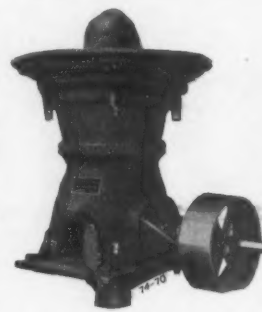
Undercut Bin Gates

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has perfect suspension for main shaft, removable countershaft bearing and steel gears.

Efficient oiling devices, great strength and simple construction give a perfect rolling motion that minimizes power consumption and possibility of breakage. Described and illustrated in Bulletin PM-4-58.

Rock Crushers

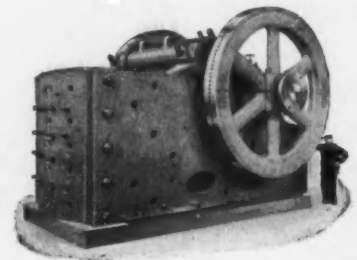
The largest crusher in the world operating on trap rock is a

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Jaw Crusher**

Installed March, 1910, in the quarries of the Birdboro Stone Co., Birdboro, Pa. It produces 3500 to 4000 tons per day.

Built in the following Receiving Opening Sizes: 26"x24"; 42"x40"; 60"x48"; 84"x60". Described in Bulletin PM-4-58.

Write for Bulletin.

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M-277.2

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See Gypsum.

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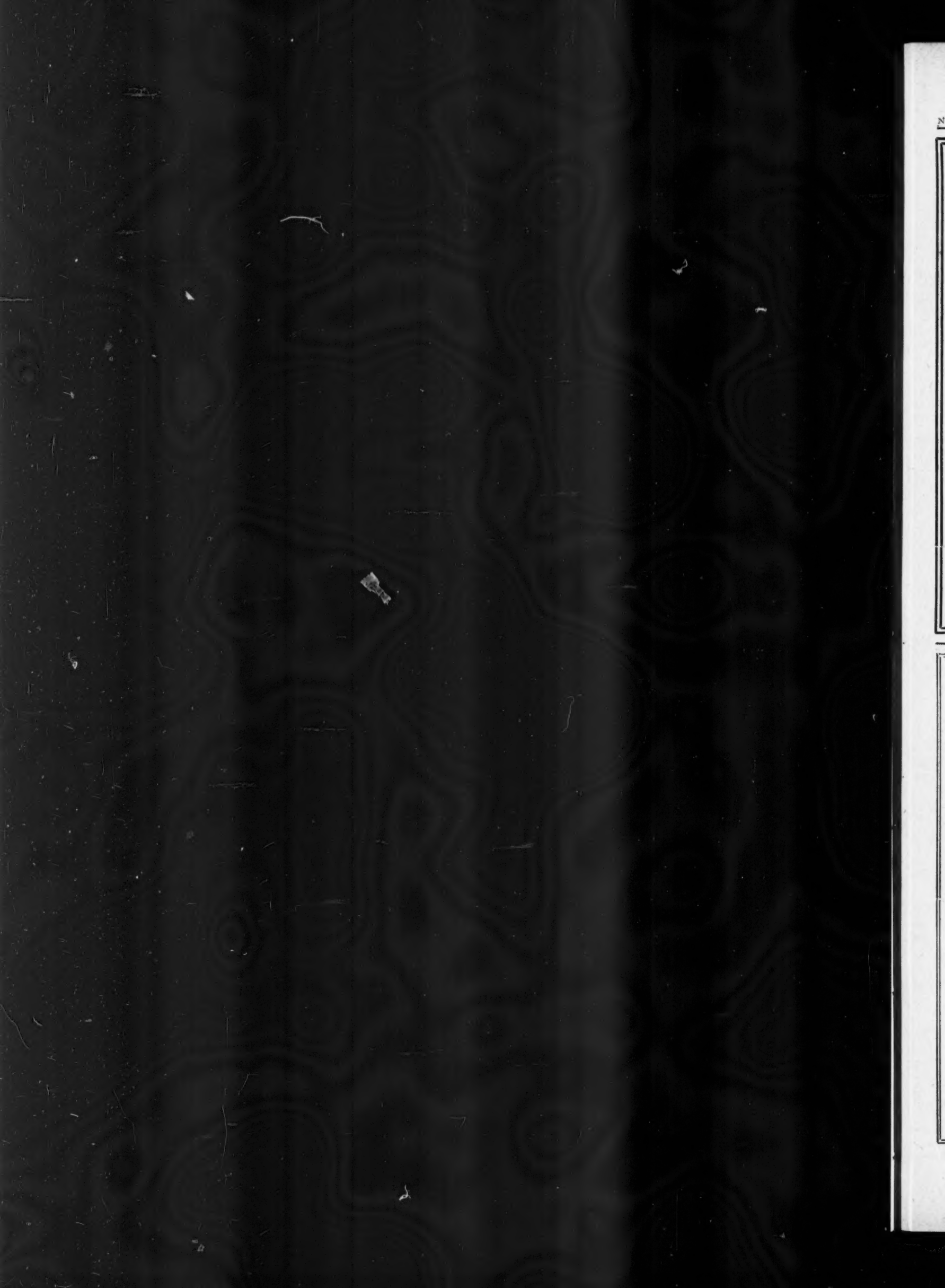
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